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ABSTRACT

A project was undertaken to implement competency-based vocational education (CBVE) programs at the three technical centers in Palm Beach County, Florida. Project staff presented staff development activities designed to orient vocational educators to the multi-center CBVE planning system. Valuable support services were also provided to vocational instructors in resource coordination and curriculum development. Core/option plans were developed for 25 program areas. "Write Student Learning Guides" was developed to aid instructors in developing learning packets. During the project year, 79 learning guides and a checklist to aid instructors in evaluating their learning guides were developed. Following the 10-page narrative are extensive appendixes. The 25 core/option plans detail the core curriculum and related tasks as well as options and related tasks. The learning guide on how to write student learning guides contains performance and enabling objectives; learning activities, resources, instruction sheet, and self-check for each enabling objective; and a performance test. A listing of completed learning guides and the learning guide checklist are also provided. (YLB)

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ED255749

Final Report

Project No. PAL-4-2C11

From August 1, 1983 to August 30, 1984

Planning for Multi-Center CBVE Programs

School Board of Palm Beach County
3323 Belvedere Road
West Palm Beach, Florida 33402

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PREFACE

This paper reports the results of a one year project funded by the Division of Vocational Education, Department of Education to plan multi-center CBVE programs in Palm Beach County, Florida. This report should be of particular interest to vocational education teachers, administrators, teacher educators, and curriculum developers planning for competency-based vocational education.

Special recognition is extended to Wilma Roy, project curriculum specialist, for significant professional contribution to the production of the report.

A special thanks is due to Lucia Gratz for typing the camera ready copy of the report.

E. Miles Bacon
Project Director
Palm Beach County

Abstract of the Final Report

Title of Project:	Planning for Multi-Center CBVE Programs
Organization:	School Board of Palm Beach County, Florida
Project Director:	E. Miles Bacon
Expenditures:	$30,000.00
Duration of Project:	August 1, 1983-August 30, 1984
Project Number:	DVE PAL-4-2Ci1

PROBLEM

The problem addressed by this project is the lack of a uniform method of curriculum development within the county. The county lacks a plan for developing CBVE programs and implementing management techniques.

OBJECTIVES

The project will focus on the need to plan for implementing CBVE in Palm Beach County. The project staff will provide staff development activities designed to orient vocational educators to the multi-center CBVE planning system.

PROCEDURE

Project objectives were identified and the project staff began developing procedures and strategies for multi-center CBVE programs. Because of the special demands of the competency-based system of instruction, the project staff provided valuable support service to the vocational instructors, coordinating resources and in curriculum development.

RESULT AND POTENTIAL UTILIZATION

Personnel in the Division of Vocational Education will carefully examine the effectiveness of the products and strategies developed during this project to aid other schools.

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I

Introduction

Statement of the Problem

The primary problem addressed by this project was the need to implement, manage, and conduct competency-based vocational education programs at the three technical centers in Palm Beach County. Although there are many individual vocational programs within the county that are committed to competency-based instruction, a uniform method of curriculum development was lacking.

Beginning in 1981 the Director of Vocational Education began extensive research into competency-based area vocational centers within Florida. He visited St. Augustine Vocational Center, Ridge Vocational-Technical Center, Orange County, and other centers in an effort to determine the type of program best suited to Palm Beach County.

School Superintendent, Thomas J. Mills, was instrumental in identifying the need for uniform curriculum development activities to enhance competency-based instruction. On June 16, 1982 the Palm Beach County School Board approved funds to support the position of Curriculum and Staff Development Specialist (See Appendix A).

Selection of Palm Beach County

Under the sponsorship of the Division of Vocational Education, Department of Education, the School Board of Palm Beach County was selected to document a planning model for the implementation of CBVE. This decision was based upon the commitment to competency-based vocational education of the school superintendent and the county vocational director.

Student Population

Three technical centers are located in Palm Beach County, commonly referred to as Florida's Gold Coast. North Technical Education Center serves the northern area including Jupiter, Juno Beach, Tequesta, Palm Beach Gardens, Riviera Beach and West Palm Beach. South Technical Education Center serves the southern end of the county from West Palm Beach to Boca Raton. West Technical Education Center located in rural Belle Glade serves western Palm Beach County and Hendry County. The technical centers serve a varied population, including both secondary and post-secondary students.

Purpose and Goals of the Project

The project began August 1, 1983 and extended until August 30, 1984. The objectives of the project were:

1. To document the applicability of the Orange County CBVE Planning Model in planning CBVE programs at the three technical centers in Palm Beach County.

2. To document for statewide use a planning model for the implementation of CBVE in multi-centers within a county structure.

3. To orient county vocational educators to the multi-center CBVE planning system.

Definition of Terms

Acknowledgement page. This learning guide page gives recognition to the instructor who prepared the learning guide, the school at which the instructor is employed, and other members of the staff for their assistance.

Attainment (mastery). The level of performance or achievement that consistently meets occupational standards set by vocational instructors responsible for a vocational program.

Competency. A task performed to a certain standard.

Competency-Based Vocational Education. A total system for planning, developing, and implementing a curriculum that is founded on three primary characteristics:

1. The curriculum is based on tasks directly related to the responsibilities of workers on the job.

2. The tasks that students are required to learn, as well as the means for assessing their attainment, are specified in advance; and this information is available to students, parents and members of the community at large.

3. Every student is provided with whatever instructional experiences needed in order to attain the tasks required by the job for which the student is training.

Duty. A distinct, major work activity in an occupational area that helps define a job in broad terms so that tasks may be grouped under each duty.

Enabling objectives. Specific objectives which state the behaviors that are essential in order for the learner to achieve the performance objective.

Entry-level. The lowest position in any promotional line as defined locally by a collective bargaining agreement, past practices or applicable personnel rules.

Instruction sheet. A resource included in the learning guide which provides the learner with readily accessible information and new ideas in the exact way in which the individual instructor wishes the learner to receive them.

Job description. A general statement about what a worker on the job does and the conditions under which the person works.

Knowledge test. An evaluation which is used to determine whether the learner has attained certain information - learning objectives required to perform a task correctly and safely.

Learning activities. Specific activities which are designed to guide the learner to achieve a stated enabling objective. Learning activities tell the learner what to do and when.

Performance objective. A statement of exactly what the learner must do in observable and measurable terms. A performance objective is the same as a behavioral objective and contains three parts:

1. Conditions: "Given"
   Describes the situation, limits, tools, and equipment of the work environment.

2. Performance: "You Will"
   States exactly what observable behavior the learner must demonstrate.

3. Standard: "How Well"
   Describe how much is required or how precise the quality of work must be.

Performance standards (criteria). The criteria that the learner must meet in order to reach attainmet of the task at the entry-level of the occupation.

Performance test. Performance standards which are used to determine whether the learner has attained a certain task. A performance test directs the learner to perform the skills of the task and to perform them under the working conditions of the occupations.

Prerequisite tasks. Skills or knowledge that must be learned before another task can be attained.

Program. An occupational title given to a collection of duties and tasks constituting the total work assignment of a single group of workers performing essentially the same type of work or having the same job title.

Purpose. Motivational statements which help the learner become prepared to learn the task. The purpose gives the learner a perception of the purpose and value of the task.

Resources. Software and hardware which are needed by the learner to complete the learning guide. This includes: instructional as well as materials and equipment used in actual performance of the task.

Self-Check. A device or method which provides for prompt learner feedback to determine whether or not the enabling objective was reached. A self-check is a means of giving a learner a chance to check the knowledge or the skill they have exercised in the process of attaining the enabling objective.

Standard hours. Standard hours represent the standard number of hours of credit given for each task on a core/option plan. Standard hours are based on the average time spent attaining a task, not on clock hours of attendance working on a task.

Student learning guide. A well defined set of directions for students to follow in attaining the desired task. The learning guide includes objectives, learning activities, resources, and a performance test. A learning guide is written for each task identified on the program's core/option plan.

Task. A specific work activity at the entry-level of the occupation which defines what the worker does. A task usually generates a product or an observable change in the work environment. It has a definite beginning and ending point.

II

Methodology and Accomplishments of Project Objectives

Project Staff

Mr. E. Miles Bacon, not funded by the project, worked closely with the project curriculum specialist in devising strategies and procedures for meeting program objectives. Wilma Roy, funded by the project, provided one-to-one and group instruction to vocational teachers regarding the development of student learning guides. Lucia Gratz was funded by the Palm Beach School Board as a clerk-typist to provide clerical assistance to the project. This is an indication of the district's support of this project.

Task 1: To document the applicability of the Orange County CBVE Planning Model in planning CBVE programs at the three technical centers in Palm Beach County

On September 14, 1983 the project staff curriculum specialist visited Orange County to determine which CBVE strategies and procedures could be transported to Palm Beach County. Upon close examination it was determined that Orange County was not placing the same amount of emphasis upon the development of learning guides as Palm Beach County intended to place. It was also discovered that Orange County intended to utilize a sophisticated computer system which Palm Beach County did not possess. Therefore, it was deemed that Orange County was not applicable to Palm Beach County and we began our project with an emphasis upon the development of learning guides.

Task 2: To document for statewide use a planning model for the implementation of CBVE in multi-centers within a county structure

During the project year the project staff concentrated their efforts on curriculum development activities and did not achieve this objective.

Task 3: To orient county vocational educators to the multi-center CBVE programs

During the project year, core/option plans were developed for 25 program areas (See Appendix B). The core/option plan identifies the tasks performed by an entry-level worker. This plan allows the student to select an area of interest once the core curriculum has been completed.

A series of inservice activities were held during the project year for vocational teachers, administrators, and support personnel to provide an orientation to CBVE (See Appendix C). These sessions were held on days designated by Palm Beach County as staff development days. On these days, personnel from the three technical centers gathered in a common location for instruction. Small group sessions were held with designated personnel for the purpose of identifying the procedure for writing student learning guides. A student learning guide "Write Student Learning Guides" was developed during the project to aid instructors in developing learning packets (See Apendix D). There were 79 learning guides developed during the project year (See Appendix E).
A learning guide checklist was completed by the instructor and attached to each learning guide (See Appendix F).

During the initial small group session the following outline was followed.

1. What is CBVE
2. Where are We Going in Palm Beach County
3. How to Write Student Learning Guides
4. Evaluate your Learning Guide

These sessions were held until the end of the project year. At this time, the sessions were eliminated due to a lack of follow-up on the part of the instructors and administrators. The project staff does not possess the authority to require teachers to participate in curriculum development activities. Therefore the lack of administrative support was a key factor in the minimal success of this project.

III

Recommendations

The project staff offers the following recommendations.

Administrative Support	1.	During the project it became increasingly apparent that the support of the school center administration was lacking, since projects of this scope require constant administrative support and follow up, it is recommended that projects of this nature only be funded when local administrative support is evident.
Writing Student Learning Guides	2.	Writing student learning guides should be considered as part of the instructor's role, such as lesson planning, management and curriculum development. However, the project staff feels that a 2 week inservice summer workshop for the purpose of writing student learning guides would be very advantageous.
Teacher Handbook	3.	It is the recommendation of the project staff that a handbook be developed for orienting new instructors to CBVE, which could also be used with experienced instructors at other schools wishing to implement CBVE.
Student Orientation	4.	A one day student orientation to CBVE should be developed for new students. Due to the significance of the material covered in orientation, the project staff suggests that orientation be conducted by school center personnel.

Year Round School

5. Any school wishing to implement CBVE is strongly encouraged to adopt the open-entry, open-exit concept. This system allows for students to enter or exit a program as personal needs dictate. Therefore, it is highly recommended that plans remain in progress to implement year-round operation with instructors having a year round contract option to obtain a truly competency-based vocational education program.

Funding for Assistant Director for Curriculum

6. It is the opinion of the project director and the county curriculum specialist that an assistant director for curriculum be budgeted for each technical center in Palm Beach County. The task of working with instructors from three centers in developing learning guides is an enormous undertaking for one person. A school center person would provide constant support and offer immediate feedback and assistance.

IV

Product Descriptions

Products developed during the project time are submitted separately and are described below.

Core/Option Plans. Core/option plans were developed during the project year. The core/option plan identifies the skills needed for an entry-level worker in the occupation. The core/option plan allows students to know in advance what skills they must perform.

Learning Guides. During the project time there were 79 learning guides written by instructors with support service provided by the project staff. Learning guides are instructional packets that guide each student, on an individual basis, through the learning process. Because a learning guide is written for each task identified on the core/option plan, it allows the students to work on different tasks and enables the instructor to provide the individualized attention where it is needed. A list of completed learning guides appears in Appendix E by program area.

"Write Student Learning Guides". This learning guide was developed to aid instructors in curriculum development.

Learning Guide Checklist. The project staff developed this checklist to aid instructors in evaluating their learning guides. Each learning guide submitted to the project staff was required to have a checklist attached.

APPENDICES

APPENDIX A

6T
BOARD REPORT
June 16, 1982

REQUEST FOR SPECIAL ALLOCATION TO SUPPORT THE DEVELOPMENT AND IMPLEMENTATION OF COMPETENCY-BASED, INDIVIDUALIZED INSTRUCTION IN THE TECHNICAL CENTERS

The Department of Vocational-Technical Education is requesting funds to purchase competency-based, individualized instructional materials and support the position of Specialist for Curriculum and Staff Development assigned to serve the vocational programs of the three, technical education centers of Palm Beach County. The amount requested for both activities is $58,871.

The Competency-Based Vocational Education (CBVE) program represents an individualized self-paced method of instruction that, once implemented, allows complete open-entry, open-exit programming for students and achieves cost-effectiveness of training in the technical education centers. In addition, the CBVE program improves the quality of the training product.

Special grant proposals for federal funds have been submitted to the Florida Department of Education, Vocational Division to support this project. However, until state approval or non-approval for these monies arrive, it is essential to begin the instructional improvement activities at the technical centers.

I recommend that the School Board approve the request for $58,871, and authorize all necessary amendments to implement the project of purchasing competency-based, individualized instructional materials and supporting the position of Specialist for Curriculum and Staff Development to serve the three technical education centers.

Respectfully submitted,

Thomas J. Mills
Superintendent of Schools

Recommended by:
Joseph A. Orr
E. Miles Bacon

Attachment

Appendix B

Core/Option Plans

BEST COPY AVAILABLE

THE SCHOOL BOARD OF PALM BEACH COUNTY

DEPARTMENT OF VOCATIONAL-TECHNICAL EDUCATION

North Technical Education Center
7071 Garden Road
Riviera Beach, Florida 33404

South Technical Education Center
1300 S.W. 30th Avenue
Boynton Beach, Florida 33435

West Technical Education Center
2625 State Road 715
Belle Glade, Florida 33430

CORE/OPTION PLAN FOR: AIR CONDITIONING, REFRIGERATION, AND HEATING MECHANICS

TASK	HOURS	OPTIONS
C	500	COMPLETING CORE CURRICULUM
01	6	Complete orientation to CBI
02	6	Complete orientation to work habits and attitutdes
03	6	Practice safety
04	12	Complete introduction to refrigeration
05	48	Complete introduction to basic refrigeration cycles
06	63	Select tools and material
07	18	Practice soldering and brazing
08	83	Complete introduction to basic electrical theory and Ohms's Law
09	27	Select compressors
10	51	Select motors and motor controls
11	30	Identify refrigerants
12	33	Select metering devices
13	69	Select electrical control devices
14	30	Use applicable codes
15	6	Prepare job estimates
16	1	Locate job openings
17	1	Create resume
18	2	Complete job application
19	2	Participate in job interview
20	6	Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

TASK	HOURS	OPTIONS
1	480	OPTION 1 - PREPARING TO BE A REFRIGERATION TECHNICIAN
01	69	Service domestic refrigeration
02	24	Troubleshoot domestic refrigeration
03	96	Service commercial refrigeration
04	60	Troubleshoot commercial refrigeration
05	50	Select equipment
06	10	Check out controls
07	12	Install ice machine
08	99	Service ice machine
09	24	Service special systems
10	24	Service walk-in cooler
11	12	Install walk-in cooler
2	808	OPTION 2 - PREPARING TO BE AN AIR CONDITIONING TECHNICIAN
01	135	Service room air conditioning
02	12	Install room air conditioning
03	270	Service residential air conditioning
04	20	Install residential air conditioning
05	50	Select equipment
06	20	Install check out controls
07	99	Service commercial air conditioning
08	24	Install commercial air conditioning
09	10	Calculate air conditioning load
10	72	Identify reverse cycle systems
11	96	Install and service water tower

TASK	HOURS	OPTIONS
3	127	OPTION 3 - PREPARING TO BE A HEATING TECHNICIAN
01	9	Identify types of systems
02	43	Calculate load
03	45	Design system
04	9	Install system
05	9	Identify reverse cycle systems
06	12	Adjust systems and components to specifications
4	105	OPTION 4 - PREPARING TO BE A DUCTBOARD INSTALLER
01	9	Measure and lay out duct-boards
02	9	Identify tools
03	12	Cut V - groove
04	15	Cut shiplap
05	9	Cut ductboard to specifications
06	6	Staple tape ductboard
07	12	Fabricate elbows
08	12	Fabricate offsets
09	15	Fabricate transition
10	6	Fabricate hangers

TASK	HOURS	OPTIONS
5	140	OPTION 5 - PREPARING TO BE A METAL DUCT (INSTALLER)
01	36	Lay out and measure
02	9	Identify hand tools
03	30	Use tools
04	8	Use shear stamp (square)
05	9	Use shear (power)
06	9	Use Pittsburg (lock)
07	6	Use Pittsburg (button)
08	15	Use Breaker (straight)
09	9	Use Breaker (finger)
10	9	Solder (metal)

4/84 Jonh Niro, NTEC
John Cook, NTEC
Bill Cheek, STEC
Carroll Redish, WTEC

APPROXIMATE COURSE LENGTH = 2160 HOURS

THE SCHOOL BOARD OF PALM BEACH COUNTY

DEPARTMENT OF VOCATIONAL-TECHNICAL EDUCATION

North Technical Education Center
7071 Garden Road
Riviera Beach, Florida 33404

South Technical Education Center
1300 S.W. 30th Avenue
Boynton Beach, Florida 33435

West Technical Education Center
2625 State Road 715
Belle Glade, Florida 33430

CORE/ OPTION PLAN FOR: AUTOMOTIVE BODY REPAIR AND REFINISHING

TASK	HOURS	OPTIONS
C		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Use hand tools
05		Use measuring tools
06		Identify parts
07		Identify auto supplies
08		Identify auto design
09		Use air tools
10		Use fasteners
11		Operate a business
12		Estimate cost
13		Identify foreman duties
14		Perform shop inventory
15		Locate job openings
16		Create a resume
17		Complete job applications
18		Participate in job interview
19		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

TASK	HOURS	OPTIONS
1		OPTION 1 - PREPARING TO BE AN APPRENTICE HELPER
01		Perform tool room duty
02		Perform general cleaning
03		Perform light sanding
04		Perform light masking
05		Remove and replace accessories
06		Identify parts
07		Perform housekeeping duties
2		OPTION 2 - PREPARING TO BE A GENERAL AUTO BODY REPAIRMAN (PREQ. = OPTIONS 1, 3, 6, 8, 9)
01		Repair panel
02		Replace panel
03		Align panel
04		Align bumpers
05		Perform metal repairs
06		Perform oxyacetylene brazing
07		Perform oxyacetylene welding
08		Perform oxyacetylene cutting
09		Use power tools and jacks
10		Perform collision repairs
11		Perform mig welding

TASK	HOURS	OPTIONS
3		OPTION 3 - PREPARING TO BE A PAINTER (PREQ. = OPTIONS 1, 5)
01		Perform spot painting
02		Perform complete painting
03		Spray enamel
04		Spray acrylic enamel
05		Spray acrylic lacquer
06		Spray polyurethane
07		Spray epoxy
08		Spray primer
09		Use reducers
10		Use thinners
11		Use paint additives
12		Use fish eye eliminator
13		Use hardener
14		Use dryers
15		Use glazing putty
16		Perform stripping
4		OPTION 4 - PREPARING TO BE AN AUTO BODY REPAIRMAN (PREQ. = OPTIONS 1, 7)
01		Identify specific frame designs
02		Identify specific auto design
03		Use power rams
04		Use frame tools, attachments and equipment
05		Use manuals
06		Use tram gauge
07		Perform light frame repairs
08		Perform compound frame damage repairs
09		Perform panel repairs to alignment specifications
10		Perform unibody repairs

TASK	HOURS	OPTIONS
11		Install McPherson strutt
5		OPTION 5 - PREPARING TO BE AN AUTO BODY DETAILER (PREQ. = OPTIONS 1, 3)
01		Use specialized tools
02		Use specialized materials (dyes, cleaners, wax)
03		Use spray equipment
04		Estimate cost
6		OPTION 6 - IDENTIFYING FUNDAMENTALS OF BRAKES AND ELECTRICAL SYSTEMS
01		Identify wheel brake components
02		Identify battery functions
03		Identify switches
04		Identify lighting system
7		OPTION 7 - PREPARING TO BE A GLASS REPAIRMAN
01		Use specialized tools
02		Use manufacturer's manual
03		Use specialized materials
04		Estimate cost repairs
05		Replace fixed glass
06		Replace moveable glass
07		Install glass
08		Repair glass mechanism (electric and manual)

TASK	HOURS	OPTIONS
8		OPTION 8 - PERFORMING BASIC UPHOLSTERY WORK (Available only at WTEC)
01		Use specialized tools
02		Repair door panels
03		Repair seats
9		OPTION 9 - PERFORMING RUST PROOFING
01		Use specialized tools
02		Maintain tools
03		Use manuals
04		Apply corrosion protection
10		OPTION 10 - PREPARING TO BE A RADIATOR REPAIRMAN (Available only at WTEC)
01		Remove and replace radiators
02		Identify special tools
03		Identify types of solder
04		Use solder
05		Clean radiator
06		Repair radiator

TASK	HOURS	OPTIONS
		4/84 William Watts, NTEC Chris Rocchio, STEC David Veale, WTEC

THE SCHOOL BOARD OF PALM BEACH COUNTY
DEPARTMENT OF VOCATIONAL - TECHNICAL EDUCATION

North Technical Education Center
7071 Garden Road
Riviera Beach, Florida 33404

South Technical Education Center
1300 S.W. 30th Avenue
Boynton Beach, Florida 33435

West Technical Education Center
2625 State Road 715
Belle Glade, Florida 33430

CORE/ OPTION PLAN FOR: AUTOMOTIVE MECHANICS

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice shop safety
04		Identify basic hand tools
05		Identify fasteners
06		Use drills, taps, and dies
07		Identify tubing, hoses, and fittings
08		Use measuring tools
09		Use basic shop equipment
10		Identify automotive supplies
11		Use service manuals
12		Use flat rate manuals
13		Perform auto safety inspection
14		Perform lubrication service
15		Service cooling system
16		Service battery
17		Inspect, adjust and replace belts
18		Inspect and service lights, horn and windshield wiper blades
19		Identify and inspect tires
20		Remove, repair and rotate tires
21		Balance tires
22		Inspect, remove and replace exhaust system components
23		Inspect and replace shock absorbers
24		Service transmission and filter
25		Service wheel bearings
26		Locate job openings

TASK	HOURS	OPTIONS
27		Create a resume
28		Complete job applications
29		Participate in job interview
30		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE A TUNE-UP SPECIALIST
01		Service conventional distributor
02		Service electronic distributor
03		Service primary ignition system
04		Service secondary ignition
05		Analyze engine performance
06		Service air and fuel filters
07		Test fuel flow and pressure
08		Remove and replace fuel pump
09		Adjust carburetor idle mixture and idle speed
10		Service and adjust automatic chokes
11		Overhaul and adjust carburetors
12		Inspect, test and service PCV and EGR systems

TASK	HOURS	OPTIONS
2		OPTION 2 - PREPARING TO BE AN ELECTRICAL SYSTEM SPECIALIST
01		Test and service battery
02		Test and analyze malfunctions in cranking system
03		Test and overhaul starter assembly
04		Test and analyze malfunctions in charging system
05		Test and overhaul alternators
06		Inspect lighting system
07		Test, adjust and replace switches
08		Test and replace dash units
09		Test and replace windshield wiper mechanisms
10		Test and replace radio
11		Test and adjust cruise control units
3		OPTION 3 - PREPARING TO BE A FRONT END SPECIALIST
01		Inspect tires and wheels
02		Inspect front and rear suspension
03		Inspect and adjust vehicle height
04		Inspect steering linkage
05		Inspect and adjust steering gears
06		Inspect, repack and replace wheel bearings and seals
07		Replace steering linkage components
08		Replace front suspension parts
09		Perform computer wheel balancing
10		Align front wheels
4		OPTION 4 - PREPARING TO BE A TRANSMISSION DRIVE LINE SPECIALIST
01		Replace universal joints and carrier bearings
02		Service clutch
03		Replace transmission mount
04		Overhaul manual transmission
05		Replace drive axle bearings and seals
06		Adjust transmission linkage
07		Service filter
08		Replace rear seal
09		Service speedometer cables and gears
5		OPTION 5 - PREPARING TO BE A BRAKE SPECIALIST
01		Diagnose faulty brake system
02		Rebuild drum brake system
03		Machine brake drums
04		Rebuild disc brake system
05		Machine disc rotors
06		Service wheel bearings
6		OPTION 6 - PREPARING TO BE AN ENGINE SPECIALIST
01		Replace engine mounts
02		Replace water pump
03		Replace expansion plugs
04		Replace valve lifters
05		Replace timing gears
06		Replace camshaft
07		OHV valve grind
08		OHC valve grind
09		Replace rear crankshaft seal
10		Remove and install engine
11		Overhaul engine

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TASK	HOURS	OPTIONS
7		OPTION 7 - PREPARING TO BE A HEATING AND AIR CONDITIONING SPECIALIST
01		Diagnose air conditioning system
02		Test and charge air conditioner
03		Test and repair electrical controls
04		Repair/replace compressors
05		Replace compressor seals and clutch
06		Replace evaporator core
07		Replace heater core
08		Test/replace heater controls
8		OPTION 8 - MAINTAINING AND REPAIRING AUTOMATIC TRANSMISSIONS
01		Clean and visually inspect automatic transmission
02		Adjust floor linkage
03		Adjust column type transmission linkage
04		Adjust linkage from engine to automatic transmission
05		Adjust modulator
06		Replace and adjust modulator
07		Adjust neutral safety switch
08		Replace neutral safety switch
09		Service the transmission filter
10		Make band adjustments (internal or external)
11		Replace external seals, gaskets, and lines on automatic transmission
12		Inspect and repair transmission cooling system
13		Replace automatic transmission cooler (external type)
14		Replace automatic transmission
15		Replace torque converter
16		Replace front pump, seal and bushings
17		Overhaul automatic transmission

TASK	HOURS	OPTIONS
9		OPTION 9 - MAINTAINING AND REPAIRING TRANS-AXLES, FRONT WHEEL DRIVE
01		Identify major sub-assemblies and components of front wheel drive vehicles
02		Remove and replace front drive hub assembly
03		Replace front hub bearing assembly
04		Remove and replace drive axle assembly
05		Replace C/V joint boots
06		Disassemble and assemble C/V joint
07		Remove and replace trans-axle sub-assembly
10		OPTION 10 - MAINTAINING AND REPAIRING FOUR WHEEL ALIGNMENT
01		Identify rear axle and suspension components
02		Remove and replace rear shocks
03		Remove and replace trailing arm assembly
04		Remove and replace rear spring
05		Service wheel bearings
06		Remove and replace track bar
07		Remove and replace wheel spindle
08		Install and calibrate rear wheel tracking and alignment equipment
09		Adjust rear wheel camber
10		Adjust rear wheel toe
11		OPTION 11 - MAINTAINING AND REPAIRING AUTOMOTIVE DIESEL ENGINES
01		Describe the operating principles of diesel engines
02		Identify the major sub-systems of diesel engines

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
03		Check fuel pump flow and pressure			
04		Bleed the fuel system			
05		Replace fuel pump and filters			
06		Replace injector lines			
07		Remove and replace injectors			
08		Make adjustments on fuel system components			
09		Replace injection pump and pump adapter seal			
10		Test injection pump housing fuel pressure			
11		Perform compression test on diesel engines			
12		Perform electrical test of diesel engine glow plugs			
13		Remove and replace diesel engine glow plugs			
14		Test diesel engine vacuum pumps			
15		Remove and replace diesel engine vacuum pumps			
16		Service oil pump			
17		Clean and test oil system			
18		Replace and lubricate oil filter			
19		Check and flush cooling system			
20		Pressure test cooling system			
21		Replace thermostat and hose			
22		Replace water pump			
23		Analyze system leaks			
		10/84 Charles Jones, NTEC Dale Millington, NTEC Andy Carlino, STEC Tom Knott, STEC Bob Whidden, WTEC			

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CORE/ OPTION PLAN FOR: BUILDING MAINTENANCE

TASK	HOURS	OPTIONS
C	230	COMPLETING CORE CURRICULUM
01	2	Complete orientation to CBI
02	3	Complete orientation to work habits and attitudes
03	10	Practice safety
04	10	Complete introduction to building maintenance
05	20	Practice basic mathematics
06	5	Select tools and supplies
07	3	Store chemicals and equipment
08	10	Troubleshoot maintenance problems
09	2	Locate job openings
10	2	Create a resume
11	2	Complete job applications
12	2	Participate in job interview
13	5	Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1	134	OPTION 1 - PERFORMING BASIC CLEANING PROCEDURES
01	6	Practice dusting and dust mopping
02	6	Clean stairway
03	6	Mop wet floors
04	6	Clean lavatory
05	6	Clean drinking fountain
06	6	Clean service sink
07	6	Clean dry floors
08	3	Practice machine scrubbing
09	3	Clean furniture
10	6	Clean glass
11	6	Clean accoustical tile
12	6	Clean aluminum
13	6	Clean chalkboard
14	6	Clean light fixtures
15	6	Clean gymnasium and multi-purpose floor
16	10	Refinish gymnasium and multi-purpose floor
17	10	Maintain heating, cooling and ventilation equipment
18	10	Control insects and rodents
19	10	Install and clean carpets
20	10	Identify chemicals
2	100	OPTION 2 - MAINTAINING LAWNS, TREES, SHRUBS, AND FLOWERS
01	10	Spray trees
02	10	Plant trees
03	10	Reset trees
04	6	Landscape with trees
05	6	Prune trees
06	4	Mow lawn

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TASK	HOURS	OPTIONS
07	10	Spray lawn
08	10	Till lawn
09	6	Edge lawn
10	10	Spray shrubs
11	6	Prune shrubs
12	6	Till flowers
13	6	Select location and types of flowers
3	100	OPTION 3 - PRACTICING BASIC CARPENTRY
01	5	Join wood
02	5	Clean ceramic and resilient tile
03	5	Lay ceramic and resilient tile
04	5	Install and repair wallboard
05	5	Repair wall frame
06	10	Read blueprints
07	5	Use hand tools
08	5	Use power tools
09	5	Select scaffolds and ladder
10	5	Frame ceiling
11	5	Frame roof
12	5	Sheet roof
13	5	Install roof coverings
14	5	Install roof trim
15	5	Install windows
16	5	Install doors
17	5	Install stairs
18	5	Install cabinets
19	5	Install ventilation
4	130	OPTION 4 - PRACTICING BASIC PLUMBING
01	3	Repair galvanized pipe
02	3	Repair faucets
03	6	Repair toilets
04	6	Repair valves

TASK	HOURS	OPTIONS
05	6	Repair sinks
06	6	Repair drains
07	3	Select steel pipe
08	3	Select American Standard pipe threads
09	3	Select tools for threaded pipe
10	3	Select pipe nipples
11	3	Select fitting angles
12	3	Select couplings, reducers, and bushing
13	6	Make and read basic sketch
14	10	Determine specifications and identifications
15	6	Perform basic welding techniques
16	3	Practice basic mathematics
17	3	Find water supply
18	6	Select copper tubings and fittings
19	6	Define principles of circulation
20	6	Select gas tank water heaters
21	6	Define electrical water heaters
22	10	Locate sewage disposal
23	10	Maintain public and private sewers
24	10	Select sewer connections
5	100	OPTION 5 - PRACTICING BASIC ELECTRICITY
01	20	Identify electrical ordinances
02	10	Define electron theory and Ohm's Law
03	10	Practice series circuits
04	10	Practice parallel circuits
05	10	Practice series-parallel circuits
06	10	Define electrical energy and power
07	10	Define batteries
08	10	Determine electrical conductors and wire size
09	10	Solve voltage drop across conductors
6	200	OPTION 6 - PERFORMING MASONRY MAINTENANCE
01	20	Pour and patch concrete

TASK	HOURS	OPTIONS
02	20	Construct concrete forms
03	20	Build a block corner
04	20	Build a block wall
05	20	Practice brick veneer
06	20	Pour concrete flooring
07	20	Pour flagstone flooring
08	20	Plaster stucco
09	20	Plaster base
10	20	Practice masonry mathematics
7	100	OPTION 7 - PERFORMING PAINTING MAINTENANCE
01	10	Practice safety in painting
02	10	Prepare for painting
03	10	Apply paint
04	10	Apply varnish
05	10	Apply shellac
06	10	Apply wallpaper
07	10	Care for brushes and rollers
08	10	Identify paint failures
09	10	Decorate with wallpaper
10	10	Practice mathematics
8	60	OPTION 8 - PERFORMING GLAZING MAINTENANCE
01	10	Practice glazing mathematics
02	10	Practice overview and glass cutting
03	10	Glaze wood sash
04	10	Identify types of glass and glass substitutes
05	10	Cut irregular shapes of glass
06	10	Practice skill and technique improvement

TASK	HOURS	OPTIONS
9	80	OPTION 9 - PERFORMING SWIMMING POOL MAINTENANCE
01	6	Clean filter
02	7	Clean drains
03	20	Select chemicals
04	10	Vacuum pools
05	10	Select algicides
06	7	Select tools and equipment
07	10	Store chemicals
08	10	Identify pH factors

3/84 Claude Vereen, NTEC

APPROXIMATE COURSE LENGTH = 1,080 HOURS

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CORE/OPTION PLAN FOR: CARPENTRY

TASK	HOURS	OPTIONS
C		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Identify employment opportunities
04		Use safety practices
05		Use measuring, marking, and testing tools
06		Use cutting tools - saws
07		Use drilling and boring tools
08		Use cutting tools - planes
09		Use edge cutting tools - chisels, gauges, knives, and axes
10		Use fastening and assembly tools
11		Use fasteners
12		Use framing square
13		Use portable saws
14		Use portable electric drills
15		Use portable electric sanders
16		Use portable electric routers
17		Use portable electric power planes
18		Use table saws
19		Use radial arm saws
20		Use band saws and scroll saws
21		Use drill press
22		Use panel saws
23		Use miter saws
24		Use planes and jointers
25		Select building materials
26		Read blueprints and drawings

TASK	HOURS	OPTIONS
27		Apply carpentry mathematics
28		Locate job openings
29		Create a resume and letter of application
30		Complete job applications
31		Participate in job interview
32		Follow-up application and interview
33		Participate in VICA
34		Build sawhorses
35		Erect scaffolding
36		Use ladders
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING BUILDING SITE AND INSTALLING FOUNDATION FORMS
01		Identify zoning restrictions
02		Identify land surface aspects
03		Identify utility services
04		Use tools in building site layout
05		Select material in building site layout
06		Identify building codes and building inspection requirements
07		Identify information found on plot plan drawings
08		Draw plot plan drawings to scale

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TASK	HOURS	OPTIONS
09		Set up builders level
10		Locate building site in relation to property lines
11		Layout building corners as per plot plan drawing using triangulation
12		Identify datum point and establish building elevation
13		Identify building lines on batter boards
14		Use tools in foundation form work
15		Select material used in foundation form work
16		Identify information found on foundation plan and wall section drawing
17		Draw foundation plan to scale
18		Fill out material orderform
19		Identify foundation lines on batter boards
20		Establish elevations of the foundation
21		Install stem wall foundation
22		Install section of steel reinforcement
23		Install corner section of monolithic form work
24		Install anchor bolts to monolithic forms
25		Install block-out for a monolithic form for a block wall
26		Calculate concrete for stem wall foundations
27		Calculate steel reinforcement for stem wall foundations
28		Maintain forms for reuse
29		Layout corners of buildings using builders level
30		Construct concrete step stair forms
31		Set screeds for concrete floors or walkways
32		Construct column or pier forms
33		Construct wall forms
34		Construct sidewalk forms
35		Locate pilings
36		Estimate cost

TASK	HOURS	OPTIONS
2		OPTION 2 - CUTTING AND INSTALLING FRAMING MEMBERS
01		Locate sill placement
02		Set floor joists
03		Fasten headers, trimmers, and bridging
04		Install subfloor or decking
05		Layout wall plates
06		Cut studs to length
07		Construct corner posts
08		Install partition framing
09		Assemble wall
10		Set corner braces
11		Construct simple roof trusses
12		Layout and cut a common rafter
13		Layout and cut a hip rafter
14		Layout and cut valley rafters
15		Layout and cut valley jacks
16		Layout and cut hip jacks
17		Prepare exterior surface
18		Apply wall sheathing
19		Apply finish exterior wall covering
20		Apply roof sheathing
21		Apply dry-in felt
22		Apply exterior roof cover
23		Layout stringers, stair horse or carriage
24		Frame stair wall
25		Construct landings
26		Set stringers
27		Set risers and treads
28		Set hand rail
29		Estimate cost

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
3		OPTION 3 - INSTALLING TRIM			
01		Install exterior cornice and trim			
02		Hand pre-hung or knockdown door units			
03		Install interior trim			
04		Install kitchen cabinets/bathroom vanities			
05		Install wall paneling			
06		Erect built-in wall units			
07		Install window units, stools, aprons			
08		Install lock sets			
09		Install bypass doors and hardware			
10		Install by-fold door hardware			
11		Install closet hardware			
12		Estimate cost			
4		OPTION 4 - PERFORMING MILLWORK			
01		Recognize characteristics of millworking			
02		Identify safety practices			
03		Design patterns from shop drawings			
04		Build laminate veneered cabinets			
05		Build solid wood cabinets			
06		Install plastic laminates			
07		Cut laminates			
08		Remove laminates			
09		Estimate cost			
					4/84 Paul George, NTEC David Biggs, NTEC Dick Talbott, STEC James R. Kidd, WTEC

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CORE/ OPTION PLAN FOR: CHILD GUIDANCE AND CARE SERVICES

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Identify career opportunities in the field of child care
04		Practice safety in the kitchen
05		Practice safety on the playground and classroom
06		Examine principles of child growth and development
07		Establish methods of effective discipline in a classroom
08		Arrange learning centers and their contents within a room
09		Identify basic nutrition needs of children
10		Prepare nutritionally adequate menus
11		Identify sanitation skills
12		Determine skills and expectations of different age groups
13		Construct appropriate learning materials for different age groups
14		Present children's activities in music, art, science, math, language, and social skills
15		Evaluate observation and participation in the center
16		Operate media equipment

TASK	HOURS	OPTIONS
17		Complete Multi-Media Red Cross First Aid Course
18		Locate job openings
19		Create a resume
20		Complete job applications
21		Participate in job interview
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE A DAY CARE WORKER
01		Relate to children and parents in a humane way
02		Identify rules and regulations of day care centers
03		Plan an indoor and outdoor day care center
04		Manage classroom activities
05		Plan for effective learning
06		Identify agencies that serve families
2		OPTION 2 - PREPARING TO BE A TEACHER-AIDE
01		Examine responsibilities of aides
02		Establish a professional attitude

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
3		OPTION 3 - PREPARING TO BE A CERTIFIED TEACHER			
01		Examine theories of personality development			
02		Identify relationships of food to health			
		11/82 Anita Buck, STEC			

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CORE/ OPTION PLAN FOR: CLOTHING PRODUCTION AND SERVICES

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Interpret textile product labels and laws
05		Troubleshoot sewing machine problems
06		Identify sewing tools
07		Use cutting equipment
08		Operate sewing machines
09		Use marking equipment
10		Press garments using pressing equipment
11		Read measuring device
12		Operate blindstitch machine
13		Operate serger (babylock)
14		Operate lockstitch
15		Apply decorative machine stitchery
16		Apply machine appliques
17		Take body measurements
18		Identify color, line and design concepts
19		Identify fibers and finishes
20		Identify fabric construction
21		Recognize characteristics of natural and man made fibers
22		Repair clothing and household textiles
23		Identify shop opportunities

TASK	HOURS	OPTIONS
24		Identify self employment opportunities
25		Locate job openings
26		Create a resume
27		Complete job applications
28		Participate in job interview
		Work on special assignments
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PERFORMING BASIC CONSTRUCTION METHODS
01		Read a pattern envelope
02		Identify pattern symbols
03		Identify grain and prepare fabric
04		Alter a pattern
05		Layout and cut fabric
06		Mark fabrics
07		Apply stay stitching and understitching
08		Select notion according to garment
09		Select appropriate construction technique
10		Construct plain seams
11		Construct seam finishes
12		Construct waistbands
13		Apply hem finishes
14		Secure hems

TASK	HOURS	OPTIONS
15		Apply zippers
16		Apply interfacings
17		Construct facings
18		Apply buttonholes
19		Attach buttons
20		Construct collar and cuffs
21		Construct pockets
22		Set-in sleeves
23		Sew shirts - men's and ladies'
24		Apply elastic
25		Sew pants
26		Construct tucks
27		Construct pleats
28		Construct gathers and shirring
29		Apply fasteners
30		Construct enclosed seams
31		Construct decorative seams
32		Prepare bias
33		Match plaids and stripes
34		Sew a plaid skirt
35		Construct darts
36		Construct fabric buttons and loops
37		Construct belts and buckles
38		Apply trims
39		Sew a dress
40		Complete fabric fact sheet
41		Construct bound buttonholes
42		Construct welt pockets
43		Apply linings and underlinings
44		Sew a jacket
45		Sew pants - men's
		Work on special assignments
2		OPTION 2 - MAKING ALTERATIONS
01		Recognize alteration problems for women
02		Recognize alteration problems for men

TASK	HOURS	OPTIONS
03		Use altering methods
3		OPTION 3 - CONSTRUCTING DRAPERIES
01		Identify types of rods
02		Measure windows
03		Estimate yardage
04		Select appropriate fabrics
05		Estimate fabric cost
06		Operate drapery pleater
07		Operate tacker
08		Construct draperies
4		OPTION 4 - PERFORMING ASSEMBLY LINE PRODUCTION
01		Construct items using assembly line techniques
02		Retail products
		12/82 Helaine Shuler, STEC

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CORE/ OPTION PLAN FOR: COMMERCIAL ART

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Identify careers in commercial art
04		Define shop safety
05		Identify tools
06		Use various scales
07		Maintain tools and supplies
08		Use basic machines
09		Maintain basic machines
10		Identify types of paper
11		Complete pencil assignments
12		Complete proportion assignments
13		Complete ink assignments
14		Complete perspective assignments
15		Complete acrylics assignments
16		Complete designer color assignments
17		Complete wash and watercolor assignments
18		Prepare a portfolio
19		Locate job openings
20		Create a resume
21		Complete job applications
22		Participate in job interview
23		Participate in VICA
		NOTE: THIS CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

TASK	HOURS	OPTIONS
1		OPTION 1 - BECOMING A MECHANICAL PASTE UP ARTIST
01		Identify tools
02		Identify alignment methods
03		Identify corrective procedures
04		Prepare overlays
05		Register overlays
06		Use scaling and cropping
07		Use inking
08		Make a composite paste up
09		Use proofreading techniques
10		Recognize type styles and specifications
11		Apply printers measurement
12		Identify agency job sheets
13		Handle letterings for paste ups
14		Identify operational procedures of Stat machine
15		Recognize layout formats
2		OPTION 2 - BECOMING A LAYOUT ARTIST
01		Apply layout design
02		Complete basic thumbnails for ad preparation
03		Layout a stationary package
04		Layout one color calendar
05		Layout grocery paste up
06		Layout ruled forms
07		Layout newsletter

TASK	HOURS	OPTIONS
08		Layout postal ad
09		Layout catalogue pages
10		Keyling catalogue page
11		Layout two color cover
12		Layout two color package
13		Layout travel company campaign
14		Complete pamphlets and layout
15		Identify job jacket
16		Develop logotype
17		Develop poster and billboard design
18		Identify newspaper advertising
19		Develop brochure design
20		Select typography
21		Create ad design
22		Prepare copy fitting and markup
23		Identify proof marks
24		Select photos
25		Crop and scale assignment
26		Develop newsletter
27		Develop magazine spread
28		Develop production techniques
29		Apply printers rule and basic mathematical fractions
30		Prepare a portfolio
		Work on special assignments
3		OPTION 3 - BECOMING A SIGN PAINTER
01		Identify tools
02		Use paints for various conditions
03		Identify various background surfaces
04		Identify various letter styles
05		Prepare sign layouts for small signs
06		Prepare sign layouts for supergraphic designs
07		Apply basic math including fractions
08		Use architectural scales in layout

TASK	HOURS	OPTIONS
4		OPTION 4 - BECOMING AN AIR BRUSH ARTIST
01		Practice airbrushing fine, medium and broad lines
02		Airbrush a spotlight effect
03		Develop and airbrush a sphere (in black and white)
04		Develop and airbrush a sphere (in two colors)
05		Airbrush a cone (two colors)
06		Airbrush a cube (one color)
07		Prepare a book jacket of any design using airbrush
08		Airbrush a cylinder with reflected lighting (two colors)
09		Airbrush a poster (full color) using a figure or a "Mod" approach with scenery
10		Airbrush and complete a technical illustration (full color and ink line)
11		Airbrush aluminum, crystal, chrome, cork and plaster
		7/83 Jack Dobbins, NTEC Ed Zytco, STEC

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CORE/ OPTION PLAN FOR: COMMERCIAL FOODS AND CULINARY ARTS

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
C		COMPLETING CORE CURRICULUM			
			27		Idenitfy ways of presenting food
			28		Prepare eggs
01		Complete orientation to CBI	29		Prepare beverages
02		Complete orientation to work habits and attitudes	30		Prepare a la carta service
			31		Prepare cafeteria service
03		Introduce food service careers	32		Arrange buffet/catering service
04		Use small equipment	33		Identify herbs & spices
05		Use large equipment	34		Identify types of cheeses
06		Clean equipment	35		Identify types of stocks
07		Clean floors	36		Make stocks
08		Clean pots and pans	37		Identify types of soups
09		Use hand tools	38		Cook soups
10		Practice safety	39		Identify types of sauces
11		Apply sanitation procedures	40		Make sauces
12		Operate dishwasher	41		Identify types of vegetables
13		Use measuring devices	42		Identify methods of cooking vegetables
14		Identify cooking and baking terms	43		Prepare vegetables
15		Determine nutrition requirements	44		Identify types of fruits
16		Convert recipes	45		Identify methods of cooking fruits
17		Use portion control	46		Prepare fruits
18		Plan menu	47		Identify types of farinaceous products
19		Identify grades and cuts of meat	48		Identify methods of cooking farinaceous dishes
20		Identify types of seafood	49		Prepare farinaceous dishes
21		Identify grades and cuts of poultry	50		Prepare garnishes
22		Identify methods of cooking meat	51		Prepare canapes
23		Identify methods of cooking poultry	52		Prepare hot and cold hors d'oeuvre
24		Identify methods of cooking seafood	53		Prepare relishes
25		Bread meats, seafood, and poultry for frying	54		Prepare dips
26		Identify methods of slicing cooked meats	55		Prepare cold soups - consommes
			56		Identify types of salads and salad greens

TASK	HOURS	OPTIONS
57		Prepare main dish salad
58		Prepare small salad
59		Prepare salad dressings
60		Prepare dessert salad
61		Identify types of sandwiches
62		Prepare sandwich variations
63		Identify ingredients used in baking
64		Bake quick breads
65		Bake yeast breads
66		Bake pies
67		Bake pastries
68		Mix and frost cakes
69		Make custards
70		Make cobblers
71		Bake cookies
72		Work on special assignments
73		Locate job openings
74		Create a resume
75		Complete job applications
76		Participate in job interview
77		Participate in VICA
		NOTE : THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE A STOREROOM MANAGER
01		Purchase food supplies
02		Receive shipment
03		Store and rotate food and supplies
04		Control inventory
05		Keep inventory records
06		Compute prices

TASK	HOURS	OPTIONS
2		OPTION 2 PREPARING TO BE A CASHIER
01		Prepare cashier's sheet
02		Make change
03		Operate cash register
04		Clear cash register
05		Report monies collected
3		OPTION 3 PERFORMING DINING ROOM SERVICE
01		Practice hygiene/grooming for service personnel
02		Practice table service
03		Perform sidework
04		Identify aspects of menu
05		Perform seating and serving
06		Perform waiter/waitress duties
07		Perform bussing duties
4		OPTION 4 PERFORMING WINE AND COCKTAIL SERVICE
01		Promote wine and liqueurs
02		Serve cocktails
03		Suggest wines
04		Select wines
05		Open and serve wines
06		Serve after dinner liqueurs
		4/84 Robert Robertson, NTEC Maureen Snoderly, NTEC Barbara Lansing, STEC Ron Zabkiewicz, STEC Gail Rushing, WTEC APPROXIMATE COURSE LENGTH = 1080 HOURS

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2625 State Road 715
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CORE/ OPTION PLAN FOR: DIESEL ENGINE MECHANICS

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Identify fasteners
05		Identify hand tools
06		Use drills, taps, and dies
07		Use power tools
08		Use measuring tools
09		Identify tubing, hoses, and fittings
10		Demonstrate knowledge of engine operating principles
11		Identify fuels, lubricants, and coolants
12		Use operator and service manuals
13		Service batteries
14		Change oil and filters
15		Identify types of filters
16		Practice cold weather starting aids
17		Perform machine operators pre-check
18		Locate job openings
19		Create a resume
20		Complete job applications
21		Participate in job interviews
22		Participate in VICA
		Work on special assignments

TASK	HOURS	OPTIONS
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE A LUBE AND SERVICE MECHANIC
01		Demonstrate knowledge of lube systems
02		Demonstrate knowledge of cooling system
03		Perform air filter maintenance
04		Perform oil sampling procedures
05		Inspect and replace exhaust system
06		Service V-belt
07		Use grease gun and fittings
08		Perform hydraulic system maintenance
09		Perform engine pre-start inspections
10		Perform engine starting and operating procedures
11		Perform engine stopping procedures
12		Perform maintenance recommendations
13		Perform daily engine care and reports
14		Perform fuel system maintenance
15		Demonstrate the use of lubrication, maintenance, and inspection
2		OPTION 2 - PREPARING TO BE A MECHANICS ASSISTANT
01		Use oxyacetylene cutting skills

TASK	HOURS	OPTIONS
02		Use advanced measuring tools
03		Use advanced shop and hand tools
04		Repair cutting tools
05		Drill holes with drill press
06		Maintain storage batteries
07		Identify cylinder heads
08		Identify pistons and connecting rods
09		Identify camshaft and gear train
10		Identify cylinder block, frames, and liners
11		Identify crankshafts
12		Replace starting system components
13		Adjust valves
14		Bleed fuel system
15		Replace injector lines and injectors
16		Disassemble cylinder head
17		Install cylinder head
18		Grind cylinder valves and seats
19		Assemble cylinder head
20		Remove pistons and rods
21		Replace piston pins and rings
22		Inspect cylinders
23		Inspect crankshaft and replace bearings
24		Install piston and rod assemblies
25		Replace timing chain
26		Replace turbocharger
27		Replace supercharger
28		Install liners
29		Install flywheel
30		Install damper
31		Install oil pan
32		Perform engine assembly and disassembly
3		OPTION 3 - PREPARING TO BE AN ELECTRICAL SYSTEMS TECHNICIAN
01		Recondition field coils, armature, and brushes
02		Recondition drive arrangements and solenoid
03		Perform starting system testing
04		Perform starting motor service and repair
05		Recognize basic charging system principles
06		Recognize generator-alternator operations
07		Recognize alternator construction
08		Recognize alternator operating principles
09		Recognize advanced alternator principles
10		Troubleshoot alternator-regulator, vibrating type
11		Troubleshoot electronic regulators
12		Troubleshoot charging system problems
13		Troubleshoot electrical and mechanical problems
14		Test alternator
15		Assemble alternator
4		OPTION 4 - PREPARING TO BE AN AUTOMOBILE DIESEL SERVICE MECHANIC
01		Demonstrate knowledge of lube system
02		Identify cooling systems
03		Identify air intake and exhaust
04		Identify starting systems
05		Identify principles of electricity
06		Identify storage of batteries
07		Identify ignition circuits
08		Service V-belt
09		Use grease gun and fittings
10		Inspect lights, horn and wiper blades
11		Repair muffler system
12		Inspect driveshaft, universal joints, and bearings
13		Flush cooling system
14		Service tires

TASK	HOURS	OPTIONS
5		OPTION 5 - PREPARING TO BE A SHOP BENCH SKILL MECHANIC
01		Demonstrate use of hydraulics
02		Use oxyacetylene cutting skills
03		Use advanced measuring tools
04		Use advanced shop and hand tools
05		Repair cutting tools
06		Drill holes with drill press
07		Use hydraulic presses
08		Use advanced drills, taps and dies
09		Use advanced pullers
10		Use pneumatic tools
11		Repair tools
6		OPTION 6 - PREPARING TO BE A DETROIT DIESEL MECHANIC (8V71, 671 INLINE, 6V71 TECHNICIAN, 53 SERIES)
01		Recondition engine (less major assemblies)
02		Recondition fuel system and governors
03		Recondition air intake system
04		Recondition lubrication system
05		Recondition cooling system
06		Recognize exhaust system
07		Recondition electrical equipment, instruments, and protective equipment
08		Recognize special equipment
09		Recognize operation instructions
10		Perform tune-up
11		Perform preventive maintenance and troublehsooting

TASK	HOURS	OPTIONS
7		OPTION 7 - PREPARING TO BE A CUMMINS NTC 300 TECHNICIAN
01		Recondition rocker lever
02		Recondition cam follower
03		Recondition fuel system
04		Recondition injectors and fuel lines
05		Recondition lube system
06		Recondition cooling system
07		Recondition drive units
08		Recondition air intake system
09		Recondition exhaust system
10		Recondition air compressor
11		Recondition electrical equipment
12		Perform engine assembly
13		Identify instruments
14		Identify mounting adapters
15		Interpret specifications
16		Recondition cylinder block
17		Recondition cylinder head
18		Perform engine disassembly
8		OPTION 8 - PREPARING TO BE A CATERPILLAR 3208 TECHNICIAN
01		Describe systems operations
02		Perform testing and adjusting
03		Interpret troubleshooting guide
04		Perform basic disassembly and assembly
05		Perform reconditioning procedures
06		Recognize low emmision engine with exhaust gas recirculation
07		Recondition air compressors

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
9		OPTION 9 - PREPARING TO BE A CATERPILLAR 3306 TECHNICIAN			
01 02 03 04 05		Describe systems operations Perform testing and adjusting Interpret troubleshooting guide Perform basic disassembly and assembly Recondition air compressors			
10		OPTION 10 - PREPARING TO BE A GMC AUTOMOTIVE DIESEL MECHANIC (6.2, 5.7. 4.3 litre diesel engine)			
		Tasks for this option are being developed.			
11		OPTION 11 - PREPARING TO BE A VOLKSWAGEN AUTOMOTIVE DIESEL MECHANIC (1.5, 1.6 litre diesel engine)			
		Tasks for this option are being developed.			
12		OPTION 12 - PREPARING TO BE AN ORAN INDUSTRIAL DIESEL MECHANIC (DJA INDUSTRIAL ENGINE)			
		Tasks for this option are being developed.			
13		OPTION 13 - PREPARING TO BE A GENERAL HELPER			
		Tasks for this option are being developed.			
					7/83 Glenn Rosenberger, WTEC

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CORE/ OPTION PLAN FOR: DRAFTING

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Draw freehand sketches
05		Use drafting instruments, equipment and media
06		Use lettering
07		Recognize line types and weights
08		Draw geometric symbols and shapes
09		Plan the drawing
10		Draw the six primary views
11		Draw one, two, and three-view drawings
12		Draw partial views
13		Apply dimensional standards
14		Use location, ordinate and reference dimensioning
15		Use metric units
16		Develop auxiliary views
17		Project primary and secondary auxiliary views
18		Apply descriptive geometry
19		Project primary and successive revolved views
20		Develop sections: full, offset, revolved, and aligned
21		Use section lining
22		Draw conventional broken-out sections

TASK	HOURS	OPTIONS
23		Draw shafts, fasteners, etc., in section views
24		Derive overall fractional and decimal dimensions
25		Calculate surface areas to be painted, roofed, etc.
26		Calculate volumes of concrete, earth, etc.
27		Use calculator for all computations
28		Convert between English and metric units
29		Draw sheet metal units
30		Draw sheet metal intersecting units
31		Use ink drawing equipment
32		Use lettering devices such as LeRoy and press-on
33		Draw axonometric views: isometric, dimetric, and trimetric
34		Draw single-point, two-point, and three-point perspective views
35		Draw oblique views
36		Draw different types of graphs and charts
37		Locate job openings
38		Create a resume
39		Complete job applications
40		Participate in job interview
41		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

Page 1 of 2

TASK	HOURS	OPTIONS
1		OPTION 1 - PREPARING TO BE A MECHANICAL DRAFTER
01		Identify standard machine parts
02		Detail single parts
03		Draw gears, cams, and power drives
04		Draw layout and assembly drawings
05		Use numerical control drawings
06		Read blueprints
07		Determine strength of materials
08		Develop pictorial presentation
09		Apply related mathematics
10		Use structural drawings
11		Use true position and form control
12		Use manufacturing processes and practices
13		Use engineering drawings
14		Draw machine construction
15		Draw guards and safety devices
16		Develop tools and die design
17		Develop jigs and fixtures
18		Apply plastic technology
19		Use computer graphics
20		Develop creative designs
21		Develop machine designs
22		Use electrical control drawings
23		Write technical reports
2		OPTION 2 - PREPARING TO BE AN ARCHITECTURAL DRAFTER
01		Determine and draw sections
02		Draw foundations
03		Draw floor plans
04		Select and draw elevations for plans
05		Draw complete house plans
06		Draw plumbing diagrams
07		Draw electrical plans
08		Draw air conditioning and heating plans
09		Draw house plans using modular components
10		Determine schedules and specifications
11		Interpret building codes and related documents
12		Draw plot plans
13		Plan for residential design
14		Read advanced blueprints
15		Draw structural components
16		Draw commercial building types
17		Fabricate architectural models
3		OPTION 3 - PREPARING TO BE A CIVIL DRAFTER
01		Acquire knowledge of cartography
02		Apply basic surveying mathematics
03		Use surveying techniques
04		Draw contour maps
05		Write technical reports

1/83 Norman Ouellette, NTEC
Robert Mahoney, STEC

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CORE/OPTION PLAN FOR: ELECTRIC WIRING (RESIDENTIAL)

	HOURS	OPTIONS
C	540	COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Identify electrical/shop safety
04		Acquire general knowledge of electricity
05		Demonstrate and use Ohm's Law
06		Define electrical terminology and draw electrical symbols
07		Analyze DC circuits with volt-ohm-milliammeter (VOM)
08		Calculate values in DC series circuits
09		Calculate values in DC parallel circuits
10		Determine resistor values
11		Calculate and measure electrical energy
12		Use electrician's tools
13		Interpret electrical layouts
14		Determine electrical conductor ampacity
15		Determine conduit fill capacity
16		Identify wiring materials
17		Determine box fill
18		Splice wires
19		Wire bell circuits
20		Wire ceiling light controlled by a single wall switch
21		Install outlet and junction boxes
22		Wire three-way switches
23		Wire four-way switches
24		Wire a switched receptacle

TASK	HOURS	OPTIONS
25		Wire and install a fluorescent light
26		Wire combination configurations of circuits
27		Trim out wiring jobs
28		Explain the nature and use of the National Electric Code (NEC)
29		Install wiring in a simulated residence
30		Connect wiring in a simulated residence
31		Install PVC
32		Bend emt conduit
33		Cut and thread conduit nipples
34		Use knock out (KO) punches
35		Estimate cost and materials
36		Maintain records
37		Locate job openings
38		Create a resume
39		Complete job applications
40		Participate in job interview
41		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1	540	OPTION 1 - INTERPRETING ELECTRICAL BLUEPRINTS
01		Explain purpose of drawings
02		Interpret drawings
03		Interpret symbols

TASK	HOURS	OPTIONS
04		Interpret notations
05		Interpret specifications
06		Interpret dimensions
07		Read a blueprint
08		Apply National Electric Code standards to blueprints
09		Draw a blueprint in compliance with the National Electric Code
10		Determine the number of circuits required
11		Determine conductor sizes and types
12		Wire switch control of lighting circuits
13		Wire lighting branch circuits for bedroom No. 2
14		Wire lighting branch circuits for bedroom No. 1
15		Wire lighting branch circuit for bathroom and passage
16		Wire lighting branch circuit for the hall and front entrance
17		Wire lighting branch circuits for kitchen, rear entry, and small appliance
18		Wire lighting branch circuit for the living room
19		Wire lighting branch circuit for the dining area, porch and cornice, garage storage area, and attic
20		Wire lighting branch circuit for the garage
21		Wire lighting and receptacle branch circuits for the terrace, recreation room, and utility room
22		Wire lighting and convenience receptacle branch circuits for the lavatory, workshop, and storage room
23		Wire special purpose outlets for portable heating units
24		Wire special-purpose outlets for a water pump and a water heater for residential use
25		Wire special-purpose outlets for the dryer and the overhead garage door openers

TASK	HOURS	OPTIONS
26		Wire special-purpose outlets for the refrigerator-freezer, counter-mounted cooking unit, and wall mounted oven circuits
27		Wire special-purpose outlets for a food waste disposer and a dishwasher
28		Wire special-purpose outlets for the bathroom ceiling heater and attic exhaust fan
29		Install heat and smoke detectors
30		Interpret service entrance and equipment layout
31		Calculate service entrance requirements
32		Interpret specifications for electrical work - single family dwelling
2	150	OPTION 2 - TROUBLESHOOTING AND MAINTENANCE
01		Solve problems
02		Follow required procedures
03		Take electrical measurements
3	60	OPTION 3 - INSTALLING SERVICE ENTRANCE
01		Identify components of an overhead service
02		Identify components of an underground service
03		Rough-in service entrance
04		Make up service distribution panels
05		Calculate service entrance conductor ampacity
06		Ground service entrance
07		Determine branch circuit requirements
08		Acquire knowledge of National Electric Code requirements
09		Determine over current protection requirements

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
4	60	OPTION 4 - REMODELING, WIRING, AND TESTING ELECTRICAL CIRCUITS			
01		Renovate wood frame construction			
02		Install outlet boxes			
03		Use surface raceways			
04		Test electrical circuits			
05		Test the ground terminal			
06		Test circuit breakers and fuses in a circuit			
		2/84 Arthur Dingee, NTEC Leonard Eisenberg, STEC APPROXIMATE COURSE LENGTH = 1350 HOURS			

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CORE/OPTION PLAN FOR: FURNITURE UPHOLSTERY

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Prepare order form
05		Use hand tools
06		Use power tools
07		Clean sewing machine
08		Adjust sewing machine
09		Measure furniture for fabric
10		Identify types of fabric
11		Identify types of vinyl
12		Identify materials and supplies
13		Thread sewing machine
14		Oil and clean machine
15		Wind bobbin
16		Locate job openings
17		Create a resume
18		Complete job applications
19		Participate in job interview
20		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

TASK	HOURS	OPTIONS
1		OPTION 1 - PRACTICING BASIC UPHOLSTERY SKILLS
01		Assemble ottoman
02		Cover ottoman
03		Make and attach buttons
04		Identify types of webbing
05		Attach webbing tight seat
06		Attach webbing for coil springs
07		Attach burlap
08		Identify types of edge roll
09		Attach edge roll
10		Strip to frame
11		Repair frame
12		Match designs and stripes
13		Cut fabric for platform
14		Shape platform
15		Cut and fit post corners
16		Sew post corners
17		Attach platform cover
18		Sew inside cover
19		Attach inside cover
20		Cut outside cover
21		Attach outside cover and trim
22		Sew cushion
23		Attach zipper
24		Cut form for cushion
25		Make and attach skirt

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TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
2		OPTION 2 - PRACTICING ADVANCED UPHOLSTERY SKILLS			
01		Attach channels			
02		Select design for channels			
03		Make and layout for channels			
04		Cut material for channels			
05		Sew channels			
06		Style channels			
07		Regulate channels			
08		Select design for tufts			
09		Perform biscuit tufts			
10		Perform corset tufts			
11		Perform diamond tufts			
12		Mark and layout for tufts			
13		Cut materials for tufts			
14		Stuff tufts			
15		Regulate tufts			
16		Attach tufts			
17		Block needlepoint			
18		Center needlepoint			
19		Apply needlepoint			
		11/82 Clarence Thomas, STEC			

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CORE/OPTION PLAN FOR: GASOLINE ENGINE MECHANICS

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Use basic hand tools
05		Use fasteners
06		Use drill, taps, dies, and helicoils
07		Use basic power tools
08		Use measuring tools
09		Select tubing, hoses, and fittings
10		Use service and parts manual
11		Apply mathematics
12		Explain fundamentals of electricity
13		Determine engine construction
14		Select fuel, oil and lubricants
15		Change oil and filters
16		Service ignition system
17		Service fuel system
18		Determine transmission design
19		Service tires
20		Service clutch and sprocket
21		Service battery
22		Locate job openings
23		Create a resume
24		Complete job applications
25		Participate in job interview
26		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

TASK	HOURS	OPTIONS
1		OPTION 1 - PREPARING TO BE A LAWNMOWER MECHANIC
01		Repair starters
02		Repair fuel pump
03		Test alternator
04		Test rectifier
05		Service bearings
06		Service clutch
07		Overhaul transmission
08		Test coil and condenser
09		Grind and lap valves
10		Troubleshoot 2 cycle engine
11		Troubleshoot 4 cycle engine
12		Tune-up 2 cycle engine
13		Tune-up 4 cycle engine
14		Overhaul float carburetor
15		Overhaul vacuum carburetor
16		Overhaul diaphragm carburetor
17		Sharpen and balance blade
18		Overhaul 2 cycle engine
19		Overhaul 4 cycle engine
2		OPTION 2 - PREPARING TO BE AN OUTBOARD MOTOR MECHANIC
01		Practice water safety
02		Tank test engine
03		Install engine on boat
04		Troubleshoot/repair power trim

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TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
05		Troubleshoot/repair ignition			
06		Troubleshoot cooling system			
07		Troubleshoot/repair fuel system			
08		Troubleshoot/repair charging system			
09		Troubleshoot/repair starting system			
10		Overhaul carburetor			
11		Test coil and condensor			
12		Perform preventive maintenance			
13		Synchronize carburetors			
14		Replace water pump			
15		Adjust control cables			
16		Overhaul lower unit			
17		Replace fuel pump			
18		Overhaul inline powerhead			
19		Overhaul V type powerhead			
20		Overhaul steering assembly			
21		Adjust shift linkage			
22		Install steering in boat			
		1/83 Bill Patterson, NTEC			

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CORE/ OPTION PLAN FOR: HEAVY EQUIPMENT AND OPERATION

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice shop safety
04		Identify fasteners
05		Identify hand tools
06		Use drill, taps, and dies
07		Use power tools
08		Use measuring tools
09		Identify tubing, hoses and fittings
10		Demonstrate knowledge of engine operating principles
11		Identify fuels, lubricants, and coolants
12		Use operator and service manuals
13		Service batteries
14		Change oil and filters
15		Identify types of filters
16		Practice cold weather starting aids
17		Perform machine operators pre-check
18		Locate job openings
19		Create a resume
20		Complete job applications
21		Participate in job interview
22		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

TASK	HOURS	OPTIONS
1		OPTION 1 - PREPARING TO BE A GENERAL HELPER
01		Clean equipment
02		Identify maintenance signs and symbols
03		Lubricate equipment
04		Use signals of operation
2		OPTION 2 - PREPARING TO BE A FRONTEND LOADER OPERATOR
01		Practice basic operations
02		Load dump trucks
03		Grade and backfill
04		Excavate material
05		Handle material
3		OPTION 3 - PREPARING TO BE A BACKHOE OPERATOR
01		Perform basic operations
02		Excavate material
03		Backfill

Page 1 of 2

TASK	HOURS	OPTIONS
4		OPTION 4 - PREPARING TO BE A CRAWLER TRACTOR OPERATOR
01 02		Perform basic operations Perform maintenance checks
5		OPTION 5 - PREPARING TO BE A BULLDOZER OPERATOR
01 02 03 04 05		Perform basic operations Grade Excavate material Perform ditching Clear land
6		OPTION 6 - PREPARING TO BE A CRANE OPERATOR
01 02 03		Perform basic operations Perform hook work Perform dragline work
7		OPTION 7 - PREPARING TO BE A DUMP TRUCK OPERATOR
01 02 03		Perform basic operations Haul material Secure loads
8		OPTION 8 - PREPARING TO BE A GRADING ESTIMATOR
01 02 03 04		Figure excavations and fills Set-up instrument Perform grade stakes Plot elevations

TASK	HOURS	OPTIONS
05		Perform bench marks Work on special assignments

11/82 Joe Harrison, WTEC
Glenn Rosenberger, WTEC

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2625 State Road 715
Belle Glade, Florida 33430

CORE/ OPTION PLAN FOR: HEAVY EQUIPMENT MECHANICS

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice shop safety
04		Identify fasteners
05		Identify hand tools
06		Use drill, taps, and dies
07		Use power tools
08		Use measuring tools
09		Identify tubing, hoses, and fittings
10		Demonstrate knowledge of engine operating principles
11		Identify fuels, lubricants, and coolants
12		Use operator and service manual
13		Service battery
14		Change oil and filters
15		Identify types of filters
16		Practice cold weather starting aids
17		Perform machine operators pre-check
18		Locate job openings
19		Create a resume
20		Complete job applications
21		Participate in job interview
22		Participate in VICA
		Work on special assignments

TASK	HOURS	OPTIONS
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE A GENERAL HELPER
01		Clean equipment
02		Identify maintenance signs and symbols
03		Lubricate equipment
04		Use signals of operation
2		OPTION 2 - PREPARING TO BE AN EQUIPMENT SERVICE MAN
01		Grease vehicle
02		Perform lubrication procedures
03		Service cooling system
04		Repair exhaust system
05		Service transmission
06		Test and service battery
07		Perform safety inspection
08		Demonstrate knowledge of filtration
09		Change oil and filter
10		Adjust belts
11		Maintain records and charts
12		Diagnose unsafe conditions

TASK	HOURS	OPTIONS
3		OPTION 3 - PREPARING TO BE A BRAKE SPECIALIST
01		Diagnose faulty brake system
02		Identify hydraulic brake system
03		Perform air compressor service
04		Describe fundamentals of brake system
05		Adjust governors
06		Identify valves and gauges
07		Service valve brakes
08		Service chambers
09		Service slack adjusters
10		Service rotowedge, actuator type brakes
11		Service quick release valves
12		Service two-way valve limiting and quick release valve
13		Service tractor protection valves
14		Service emergency controls
15		Service air starting systems
16		Overhaul master cylinder
17		Overhaul wheel cylinder
4		OPTION 4 - PERFORMING ELECTRICAL SYSTEMS FUNCTIONS
01		Test starting/charging system
02		Identify electron theory and fundamentals
03		Use service tools and equipment
04		Use lead acid battery
05		Service battery
06		Maintain battery
07		Service and bend test the starter motor
08		Troubleshoot charging system
09		Test and service accessories
10		Test lighting system
11		Troubleshoot electrical system
5		OPTION 5 - PREPARING TO BE A TUNE-UP SPECIALIST
01		Test ignition coils
02		Diagnose ignition malfunctions
03		Remove and replace distributor
04		Test fuel pump/gas
05		Check compression
06		Perform timing procedures
07		Adjust to manufacturer's specifications
08		Service points
09		Assemble gas engine
10		Diagnose engine malfunctions
6		OPTION 6 - PERFORMING SUSPENSION SYSTEM OPERATIONS
01		Replace shocks
02		Replace ball joints
03		Replace king pins
04		Service rear suspension
05		Service front suspension
06		Diagnose steering suspension problems
07		Service steering linkage and suspension
08		Assemble saginaw steering sector to manufacturer's specifications
09		Demonstrate knowledge of suspension theory
7		OPTION 7 - PERFORMING TRANSMISSION AND TRANSFER CASE OPERATIONS
01		Rebuild driveshaft
02		Replace clutch/pressure plate
03		Troubleshoot transmission problems
04		Replace manual transmission
05		Rebuild 958LL Fuller transmission

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
06		Rebuild 13 speed Fuller transmission			
07		Rebuild Ford 3.03 three speed			
08		Rebuild D-2 transmission			
09		Inspect tracks and track adjustment			
10		Demonstrate knowledge of steering clutches and functions			
11		Demonstrate knowledge of auxiliary transmission and transfer case			
12		Rebuild T-18 Warner 4 speed			
13		Demonstrate knowledge of differentials			
14		Demonstrate knowledge of universal joints and propellor			
15		Demonstrate knowledge of shafts			
16		Adjust clutch			
17		Service dry type clutch assemblies			
18		Adjust oil type clutches			
19		Diagnose transmission problems			
20		Diagnose transfer case malfunctions			
		7/83 Joe Harrison, WTEC			

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2625 State Road 715
Belle Glade, Florida 33430

CORE/ OPTION PLAN FOR: INDUSTRIAL ELECTRONICS

TASK	HOURS	OPTIONS
C		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Apply electronics math
05		Use symbols and measuring devices
06		Define electricity
07		Explain voltage, current and resistance
08		Convert numbers to scientific notation, decimals and metric prefixes
09		Solve problems using Ohm's Law
10		Analyze series circuits
11		Perform parallel circuit calculations
12		Perform parallel circuit analysis
13		Calculate voltage across and current through each resistor in the circuit
14		Calculate all known voltages and currents in any series-parallel circuit
15		Design voltage dividers and power
16		Solve problems using Kirchhoff's Laws
17		Perform advanced methods of circuit analysis
18		Solve problems using capacitors and the RC time constant
19		Calculate problems using inductors and the L/R time constant
20		Recognize semiconductor concepts
21		Calculate the frequency of the waveform
22		Calculate the time of one cycle

TASK	HOURS	OPTIONS
23		Calculate the value of the sine of any angle between 0° and 360°
24		Use an oscilloscope
25		Sketch the sinusoidal waveform representation of two sinusoidal waveforms
26		Calculate the instantaneous voltage and current values in an ac resistive circuit and plot the results
27		Calculate capacitance, capacitive reactance, current, voltage, and power for each capacitor and for the circuit total
28		Calculate voltage, current, and power values
29		Determine total inductance of the circuit
30		Determine total inductance of two inductors connected in a series or parallel aiding or opposing and their coefficient of coupling
31		Determine the secondary voltage, the primary and secondary current, the secondary frequency, and the primary and secondary power
32		Determine the inductive reactance of each inductor, the total inductance, the total current, the voltage across each inductor, the reactive power of each inductor, and the total reactive power in the circuit for a circuit of series-connected inductors

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TASK	HOURS	OPTIONS
33		Determine the inductive reactance of each inductor, the total inductive reactance the total inductance, each inductive branch current, the total current, the reactive power of each inductor, and the total reactive power in the circuit of parallel-connected inductors
34		Determine phase angles of RL series and parallel circuits
35		Determine the Q of a coil
36		Calculate the instantaneous voltage and current values in the circuit
37		Convert time intervals to time constants and time constants to time intervals in RC and RL circuits
38		Calculate total reactance, total reactive current, total reactive voltage, and total reactive power in RLC circuits
39		Calculate current, voltage, impedance and power
40		Use phasor algebra
41		Perform complex RLC circuit analysis
42		Calculate resonance
43		Locate job openings
44		Create a resume
45		Complete job applications
46		Participate in job interview
47		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - REPAIRING RADIOS AND TELEVISIONS
01		Identify types of power supplies
02		Repair power supplies
03		Identify types of horizontal sweep circuits
04		Repair horizontal sweep circuits
05		Identify types of high voltage circuits
06		Troubleshoot high voltage circuits
07		Identify types of vertical sweep circuits
08		Repair vertical sweep circuits
09		Identify types of synchronization
10		Repair synchronization
11		Identify types of intermediate amplifiers
12		Repair intermediate amplifiers
13		Repair video circuits
14		Repair automatic gain control circuits
15		Adjust color circuits
16		Replace picture tubes
17		Repair audio circuits
18		Install antenna
19		Troubleshoot A.M. and F.M.
2		OPTION 2 - PRACTICING DIGITAL ELECTRONICS
01		Identify types of digital displays
02		Identify digital numbering system
03		Use binary logic gates
04		Code, encode, and decode
05		Test flip flops
06		Use counters
07		Test A/S and D/A converters
08		Construct and test counters, shift registers, and trigger circuits
09		Test arithmetic logic circuits
10		Test memories
11		Test digital systems
12		Solve boolean algebra problems
13		Adjust flip flops and counters
14		Adjust timing circuits
15		Design logic circuits

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
3		OPTION 3 - REPAIRING MICROPROCESSORS AND MINICOMPUTERS			
01		Identify digital numbering systems			
02		Use binary arithmetic			
03		Identify major computer components			
04		Recognize computer fundamentals			
05		Write short programs			
06		Implement input-output devices			
07		Test memories			
08		Use programming applications			
09		Troubleshoot mini computers			
10		Convert from one numbering system to another			
11		Interface microcomputer with another device			
12		Apply logical instructions			
4		OPTION 4 - REPAIRING BIOMEDICAL EQUIPMENT			
01		Practice patient safety			4/84 Robert Read, NTEC
02		Test operational amplifiers			Lew Ross, NTEC
03		Test differential amplifiers			Ray Cotter, NTEC
04		Test power amplifiers			Bill Godsey, STEC
05		Test low pass amplifiers			Joe Perez, STEC
06		Test unijunction oscillators			
07		Test wheatstone bridge			APPROXIMATE COURSE LENGTH =
08		Test voltage level detectors			
09		Test electrocardiograph			
10		Test ECG monitor			
11		Test cardiotachometer			
12		Test electronic clinical thermometer			
13		Test blood pressure recorder			

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CORE/ OPTION PLAN FOR: MACHINE SHOP

TASK	HOURS	OPTIONS
C	270	COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Clean facility
05		Maintain machinery
06		Perform machinery lubrication checks
07		Use vernier scale
08		Use micrometer
09		Use steel rules
10		Read decimal rules
11		Use hand hacksaw
12		Use files
13		Use filing
14		Use cold chisels
15		Use hand tapping
16		Cut threads with a hand die
17		Identify reamers
18		Use reamers
19		Use horizontal band saw
20		Use vertical band saw
21		Use band saw welding
22		Use abrasive cut off machine
23		Interpret blueprints
24		Calculate shop math
25		Identify types of drill presses
26		Identify parts of drill press
27		Operate vertical milling machine
28		Operate Bridgeport J-Head
29		Identify parts of a lathe
30		Practice lathe safety operations
31		Operate lathe
32		Identify parts of horizontal milling machine
33		Practice milling machine safety
34		Perform plain surface grinding
35		Identify metal shapes
36		Identify properties of metals
37		Identify nonferrous metals
38		Identify ferrous metals
39		Spark test common steels
40		Spark test tool steels
41		Harden carbon steel
42		Temper carbon steel
43		Case harden steel
44		Setup oxy-fuel equipment
45		Cut carbon steel using oxy-fuel equipment
46		Gas weld carbon steel joint
47		Braze ferrous and nonferrous metals
48		Identify supervisory functions
49		Create a resume
50		Complete job applications
51		Participate in job interview
52		Locate job openings
53		Participate in VICA

NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.

TASK	HOURS	OPTIONS
1	90	OPTION 1 - MEASURING AND INSPECTING
01		Read universal bevel protractor
02		Read telescoping and small hole gauge
03		Use the sine bar
04		Use gauge blocks
05		Use inside micrometer
06		Use depth micrometer
07		Measure with height gauges
08		Measure screw threads
09		Measure with taper on a workpiece
10		Identify combination set
11		Identify layout tools
12		Identify trammel
13		Identify layout with vernier height gauge
14		Perform surface finish
15		Check surface finish
2	60	OPTION 2 - PERFORMING DRILL OPERATIONS
01		Hold devices on a drill press
02		Identify drills and parts of a drill
03		Sharpen a drill
04		Perform counterboring, countersinking, and spotfacing
05		Troubleshoot drilling problems
06		Use radial drill
07		Set up radial drill press
08		Cut fluids
09		Perform hand grinding
3	540	OPTION 3 - OPERATING A LATHE
01		Grind a lathe tool bit
02		Identify tool holders for the lathe
03		Operate speeds, feeds, and depths of cut on a lathe
04		Perform four jaw chucks
05		Perform three jaw chucks
06		Practice collets
07		Practice turning
08		Practice facing
09		Locate and drill center holes
10		Drill and tap
11		Ream
12		Bore
13		Turn between corners
14		Perform knurling
15		Perform parting and grooving
16		Thread forms
17		Screw thread classes of fit
18		Cut American National form threads
19		Perform taper turning - compound rest
20		Perform taper turning - offset
21		Perform taper turning - taper attachment
22		Perform machining with mandrels
23		Use the steady rest
24		Use the follower rest
25		Cut internal threads
26		Cut metric threads
27		Select cemented carbide grades
28		Use tool post grinder
29		Interpret lathe operations from blueprint
4		OPTION 4 - OPERATING A MILLING MACHINE
01		Square work in milling machine
02		Care for horizontal milling machine
03		Identify workholding devices for the milling machine
04		Identify cutter holding accessories

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TASK	HOURS	OPTIONS
05		Identify milling machine setups
06		Use cutting speeds
07		Feed on the milling machine
08		Set up a milling machine vise
09		Operate arbor driven milling cutters
10		Set up milling machine arbors
11		Set up side milling cutter
12		Use end mills
13		Set up and cut keyways
14		Use edge finders
15		Bore with the adjustable boring head
16		Use the dividing head set
17		Use direct indexing
18		Calculate simple indexing
19		Use angular indexing
20		Interpret milling operations from blueprint
5	300	OPTION 5 - OPERATING A GRINDING MACHINE
01		Troubleshoot surface grinding problems
02		Identify parts of the cylindrical grinder
03		Grind shoulders
04		Grind external tapers
05		Troubleshoot cylindrical grinding problems
06		Identify components of a tool and cutter grinder
07		Sharpen straight reamers
08		Sharpen end mills
09		Sharpen plain milling cutters
10		Identify grinding wheels
11		Select grinding wheels
6	60	OPTION 6 - OPERATING A SHAPER
01		Identify parts of a shaper
02		Use speeds and feeds on a shaper
03		Set up a shaper
04		Square work on a shaper
7	165	OPTION 7 - OPERATING NUMERICAL CONTROL MACHINES
01		Introduce computer assisted programming
02		Determine numerical control
03		Describe numerical tape
04		Produce numerical control
05		Position point-to-point tape using Friden Flexowriter Tape Machine
06		Set tool length
07		Solve machine problems
08		Operate the 3-axis numerical control compudyne manually
09		Operate the 3-axis numerical control compudyne from numerical control tape
10		Generate angles and radii on 3-axis compudyne
		2/84 Daniel Gerhart, NTEC Donald Zaccagnino, WTEC APPROXIMATE COURSE LENGTH = 2,025 HOURS

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CORE/ OPTION PLAN FOR: MARINE MECHANICS

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Use hand tools
04		Use special tools
05		Use power equipment
06		Identify fumes and chemical reactions
07		Practice safety
08		Adjust pressure gauges
09		Set torch
10		Adjust flame
11		Identify ferrous and nonferrous metals
12		Apply basic electron theory
13		Identify electrical symbols
14		Draw schematics
15		Reassemble starter
16		Reassemble alternators
17		Determine battery construction
18		Service battery
19		Test battery
20		Select battery capacity
21		Install spark plugs
22		Determine heat range
23		Install accessories
24		Locate job openings
25		Create a resume
26		Complete job applications

TASK	HOURS	OPTIONS
27		Participate in job interview
28		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE AN OUTBOARD MECHANIC
01		Identify components of an ignition
02		Rebuild distributors
03		Replace contact breakers and switching modules
04		Repair advance units
05		Set timing
06		Repair magneto
07		Replace capacitor ignition system
08		Analyze ignition failures
09		Identify components of a carburetor
10		Identify principles of carburetion
11		Overhaul carburetor
12		Rebuild fuel pump
13		Install fuel pump
14		Install fuel lines and filters
15		Explain fuel and air flow theory
16		Overhaul powerhead
17		Repair steering system operation
18		Replace cable steering
19		Adjust hydraulic steering

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TASK	HOURS	OPTIONS
20		Adjust throttle and shift
21		Rebuild manual shift
22		Rebuild hydraulic shift
23		Rebuild electric shift
24		Install water pump
25		Rebuild propellor
2		OPTION 2 - PREPARING TO BE AN INBOARD-OUTBOARD MECHANIC
01		Identify components of an ignition system
02		Rebuild distributors
03		Replace contact breakers and switching modules
04		Repair advance units
05		Set timing
06		Replace capacitor ignition systems
07		Analyze ignition failures
08		Identify components of a carburetor
09		Identify principles of carburetion
10		Overhaul carburetor
11		Rebuild fuel pump
12		Install fuel tank
13		Install fuel lines and filters
14		Explain fuel and air flow theory
15		Overhaul powerhead
16		Repair steering system operation
17		Replace cable steering
18		Adjust hydraulic steering
19		Adjust throttle and shift components
20		Rebuild manual shift
21		Rebuild hydraulic shift
22		Rebuild electric shift
23		Install water pumps
24		Rebuild propellors

TASK	HOURS	OPTIONS
		11/82 Mike Kissane, NTEC Jim Smith, STEC

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CORE/ OPTION PLAN FOR: MASONRY

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Identify hand tools
05		Mix practice mortar
06		Mix masonry mortar
07		Manipulate mortar for brick
08		Throw head joints or cross joints on brick
09		Use plumb rules or levels
10		Lay bricks to a line
11		Construct a brick wall between existing leads
12		Strike joints
13		Rake joints
14		Cut masonry materials with hand tools and cut off saws
15		Estimate total material costs for masonry jobs
16		Operate level transit
17		Layout building
18		Erect scaffolding
19		Locate job openings
20		Create a resume
21		Complete job applications
22		Participate in job interview
23		Participate in VICA

TASK	HOURS	OPTIONS
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PERFORMING BRICKMASON DUTIES
01		Lay a 4" rack-back lead
02		Lay a 4" brick lead
03		Lay a 4" brick corner
04		Clean brickwork
05		Construct a 4" brick wall
06		Lay an 8" brick lead
07		Lay an 8" brick corner
08		Contruct an 8" brick wall
09		Construct a brick pier
10		Layout structural and pattern bonds
11		Construct stack bond wall
12		Lay brick paving
13		Construct a single flue chimney
14		Construct a brick wall with chase
15		Construct a brick wall with pilasters
16		Construct a fireplace
17		Construct a brick wall with a corbel
18		Construct a square barbeque
19		Enclose a heatilator
20		Construct a brick wall with control or expansion joints
21		Construct a brick column

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
2		OPTION 2 - PERFORMING BLOCKMASON DUTIES			
01		Manipulate mortar for blocks			
02		Lay blocks to a line			
03		Construct a block wall between existing leads			
04		Lay an 8" block lead			
05		Lay an 8" block corner			
06		Construct an 8" block wall			
07		Construct an 8" block foundation			
08		Construct an 8" block wall with a window opening			
09		Construct an 8" block wall with door opening			
10		Construct an intersecting block wall			
11		Lay a 4" block lead			
12		Lay a 4" block corner			
13		Construct a 4" block wall			
14		Construct a composite wall			
3		OPTION 3 - PERFORMING CEMENTMASON DUTIES			
01		Recognize tools and equipment for concrete			
02		Build forms and grade for slabs			
03		Lay and pour lintels			
04		Place and finish concrete			
		11/82 Matt Korenski, STEC			

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CORE/ OPTION PLAN FOR: NURSERY OPERATIONS

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Operate tractor and engine controls
05		Operate tractor mounted equipment
06		Service tractor and equipment
07		Classify plants
08		Identify plants by scientific and common name
09		Prepare rooting and growing media
10		Plant a seedbed
11		Root cuttings
12		Air layer plants
13		Graft and bud plants
14		Transplant plant materials
15		Control weeds
16		Control insects
17		Control plant diseases
18		Irrigate plants
19		Prune plants
20		Protect plants from frost
21		Apply dry fertilizers
22		Apply liquid fertilizers
23		Measure land
24		Survey land
25		Prepare a landscape plan
26		Determine land capability
27		Establish and care for lawns
28		Replace trees and shrubs
29		Grow vegetable and flower garden
30		Apply protective coatings
31		Construct horticultural facilities
32		Maintain irrigation equipment
33		Service power and hand tools
34		Service electrical equipment and installations
35		Service small gasoline engines
36		Locate job openings
37		Create a resume
38		Complete job applications
39		Participate in job interview
40		Participate in FFA
		Work on special assignments
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE A GROUNDS MAINTENANCE KEEPER
01		Fertilize trees
02		Fertilize lawn with a spreader
03		Lime soil
04		Seed a new lawn
05		Spot seed an established lawn
06		Prune new trees and shrubs
07		Prune established trees and shrubs
08		Repair bark damage on trees

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TASK	HOURS	OPTIONS
09		Repair split limbs on trees
10		Protect trees and shrubs from frost and freeze
11		Install guy wires on trees
12		Plant balled and burlap stock
13		Use plant sprayer
14		Perform bulb planting
15		Perform forcing bulbs
16		Transplant annuals
17		Prepare lawn seedbed
18		Root pruning trees and shrubs
19		Top prune trees and shrubs
20		Spray trees and shrubs
21		Edge flower beds
22		Ball and burlap trees and shrubs
23		Transplant trees and shrubs
24		Mulch shrubs
25		Water grounds
26		Wrap trees
27		Construct temporary cold frame construction
28		Use a cold frame
29		Sod lawn area
30		Perform spot type soil testing
31		Control soil erosion
32		Apply ground cover placement
33		Use insecticides and herbicides
34		Aerate lawn
35		Perform thatch control
36		Mow grass
37		Trim hedge
38		Apply composte
39		Line out nursery stock and container
40		Fertilize shrubs
2		OPTION 2 - MAINTAINING GREENHOUSE AREA
01		Mix soil
02		Perform germination test
03		Sow seeds
04		Transplant seedlings
05		Fertilize transplants
06		Pinch back
07		Apply hormones on cuttings
08		Perform t-budding
09		Perform patch budding
10		Root cuttings of delicate roots
11		Root herbaceous stem cuttings
12		Root leaf cuttings
13		Perform tip layering
14		Determine soil pasteurization
15		Pot hanging plants
16		Pot bulbs
17		Water plants
18		Label plants
19		Repot plants
3		OPTION 3 - MAINTAINING LANDSCAPE AREA
01		Identify landscape symbols
02		Use measurements and scales
03		Determine landscape needs
04		Draw a plan
05		Select plants
06		Select trees for a plan
07		Select flowers for a plan
08		Select foundation plants
09		Select border plants
10		Purchase plants
11		Plan the public area
12		Plan family garden area
13		Plan the service area
14		Color a landscape design
4		OPTION 4 - PREPARING TO BE A HORTICULTURE MECHANIC
01		Maintain tools
02		Care for cutting tools

TASK	HOURS	OPTIONS
03		Clean and gap spark plug for air-cooled engines
04		Change engine oil on grounds equipment
		12/82 Tom Newton, STEC

TASK	HOURS	OPTIONS

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THE SCHOOL BOARD OF PALM BEACH COUNTY

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Boynton Beach, Florida 33435

West Technical Education Center
2625 State Road 715
Belle Glade, Florida 33430

CORE/OPTION PLAN FOR: PARTS MARKETING

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Use hand tools
05		Use power tools
06		Use standard fasteners
07		Perform basic mathematical functions
08		Identify fuels, lubricants and fluids
09		Identify tubing, hoses and fittings
10		Demonstrate knowledge of automobiles
11		Describe operation of a four stroke cycle engine
12		Describe operation of a two stroke cycle engine
13		Identify engine components
14		Use parts manual
15		Estimate cost
16		Identify parts and components
17		Use measurements
18		Take inventory
19		Take telephone orders
20		Work on counter
21		Identify methods of indexing catalogs
22		Use microfiche catalogs
23		Locate job openings
24		Create a resume
25		Complete job applications

TASK	HOURS	OPTIONS
26		Participate in job interview
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - PREPARING TO BE A SHIPPING AND RECEIVING CLERK
01		Receive incoming merchandise
02		Open glued pasteboard cartons
03		Open taped cardboard cartons
04		Open nailed wooden crates
05		Open banded or wired cartons
06		Unpack incoming stock
07		Pack orders for delivery or shipment
08		Prepare bill of lading
2		OPTION 2 - PREPARING TO SELL MERCHANDISE
01		Conduct cash sale
02		Conduct charge account sale
03		Advise customer on product application
04		Assemble order at counter
05		Accept core or trade-in unit for rebuilt or exchange item

Page 1 of 2

TASK	HOURS	OPTIONS
06		Extend prices according to customer price classification
07		Figure discounts
08		Accept returned merchandise for cash refund or credit
09		Advise salesperson of customer possibilities
10		Replace catalog and price sheets
11		Maintain record on lost sales
12		Prepare and construct displays
13		Measure engine parts with micrometer
14		Figure sales tax
15		Checkout cash register
3		OPTION 3 - PERFORMING STOCKING AND INVENTORY DUTIES
01		Move stock to storage area
02		Inspect stock daily
03		Fill bin from surplus stock on hand
04		Maintain perpetual inventory
05		Replace superseded numbers (card desk)
06		Place emergency orders for items not carried in stock
07		Take inventory
4		OPTION 4 - PERFORMING CLERICAL DUTIES
01		Prepare credit memorandum
02		Process defective parts claim to manufacturer
03		Write tickets for completed machine shop job
04		Prepare price quotations
05		File claims for shortage on damaged merchandise

TASK	HOURS	OPTIONS
06		File invoices
		12/82 George Burnell, STEC Gary Kleisley, WTEC

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Belle Glade, Florida 33430

CORE/ OPTION PLAN FOR: PRINTING AND GRAPHIC ARTS

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice shop safety
04		Identify chemicals
05		Identify printing papers
06		Identify tools
07		Identify and use ink
08		Maintain tools and supplies
09		Use printing mathematics and measures
10		Use mechanical art
11		Practice job order procedures
12		Locate job openings
13		Create a resume
14		Complete job applications
15		Participate in job interview
16		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - OPERATING PROCESS CAMERA
01		Practice equipment safety
02		Mix chemicals for developing
03		Produce line negatives
04		Produce halftone process
05		Make enlargements and reductions
2		OPTION 2 - STRIPPING
01		Identify masking sheet selection
02		Identify gripper limitations
03		Strip negative
04		Opaque negative
05		Register multi-color
3		OPTION 3 - PREPARING PLATES FOR OFFSET
01		Practice equipment safety
02		Operate plate burner
03		Identify chemicals
04		Develop plate
05		Perform step and repeat process
06		Perform double burn process
4		OPTION 4 - PREPARING TO BECOME A PRESS OPERATOR (OFFSET)
01		Practice equipment safety
02		Operate AB Dick 360 press
03		Operate AM 1250 press
04		Maintain equipment

TASK	HOURS	OPTIONS
05		Register multi-color
5		OPTION 5 - PREPARING TO BECOME A PRESS OPERATOR (LETTERPRESS)
01		Operate Miehle verticle press
02		Operate Heidelberg press
03		Operate reproduction press
04		Number
05		Perforate
06		Lock-up
6		OPTION 6 - PREPARING TO BECOME A QUICK COPY OPERATOR
01		Practice equipment safety
02		Operate platemaker (Itek)
03		Operate press
04		Maintain platemaker (Itek)
7		OPTION 7 - PERFORMING BINDERY
01		Practice equipment safety
02		Jog and stack paper
03		Operate folding, scoring and perforating machines
04		Collate manually
05		Operate bookbinding machine
06		Operate paper cutter
07		Operate paper drill
08		Operate stapling machine
09		Operate shrink wrap machine
10		Practice binding process

TASK	HOURS	OPTIONS
8		OPTION 8 - OPERATING PHOTO TYPESETTING EQUIPMENT
01		Operate Compugraphic junior
02		Operate Compugraphic 7200
03		Process photographic materials
9		OPTION 9 - PRACTICING LAYOUT AND PASTE-UP DESIGN
01		Operate waxer
02		Use line-up table
03		Use light table and straight edge
04		Produce camera ready copy

11/82 Cliff Larrabee, NTEC
Milton Wickles, NTEC

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2625 State Road 715
Belle Glade, Florida 33430

CORE/ OPTION PLAN FOR: TECHNOLOGY OF GOLF AND TURF EQUIPMENT

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Use hand tools
05		Measure with special tools
06		Explain principles of engine operation
07		Explain ignition system principles
08		Service carburetor
09		Service cooling system
10		Service lubrication system
11		Service exhaust system
12		Select air filters
13		Install spark plugs
14		Identify engine parts
15		Measure engine parts to determine wear
16		Use service and parts manuals
17		Troubleshoot engine malfunctions
18		Maintain hydraulic system
19		Lubricate equipment
20		Set up preventive maintenance schedule
21		Replace brake system
22		Troubleshoot brake system
23		Replace clutch
24		Troubleshoot clutch problems
25		Assemble transmission
26		Troubleshoot transmission
27		Assemble steering parts
28		Adjust steering linkage
29		Troubleshoot steering problems
30		Assemble drives
31		Troubleshoot drive problems
32		Locate job openings
33		Create a resume
34		Complete job applications
35		Participate in job interview
36		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1		OPTION 1 - MAINTAINING GOLF EQUIPMENT
01		Determine function of equipment
02		Assemble equipment
03		Adjust equipment
04		Troubleshoot equipment problems
2		OPTION 2 - MAINTAINING REELS
01		Explain operation of reel mowers
02		Sharpen and lap reels

TASK	HOURS	OPTIONS	TASK	HOURS	OPTIONS
03		Adjust reels			
04		Lubricate reels			
05		Troubleshoot reel problems			
3		OPTION 3 - MAINTAINING CHAINSAW			
01		Explain operation of chainsaw			
02		Sharpen chainsaw			
03		Adjust chainsaw			
04		Maintain chainsaw			
05		Troubleshoot chainsaw problems			
4		OPTION 4 - REPAIRING IMPLEMENTS			
01		Assemble implements			
02		Adjust implements			
03		Lubricate implements			
04		Troubleshoot implements			
		1/83 Bill Hayes, STEC			

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CORE/ OPTION PLAN FOR: TELEVISION PRODUCTION TECHNOLOGY

TASK	HOURS	OPTIONS
A		COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Design a set
05		Build a set
06		Read a design
07		Position lighting
08		Set intensity of light
09		Put gels in light
10		Filter the light
11		Read a light meter
12		Read a wave form monitor
13		Identify camera operations
14		Register a camera
15		White balance a camera
16		Set the appetures on camera
17		Identify camera cabling
18		Practice using a camera
19		Operate multi-signal distributor
20		Operate switcher
21		Operate special effects generator
22		Operate character
23		Operate video distribution
24		Record and play using VCR
25		Play soundboards
26		Mike a set

TASK	HOURS	OPTIONS
27		Operate audio console
28		Operate turntables
29		Operate cassettes
30		Operate phono
31		Identify audio system through console audio to distribution board
32		Practice recording
33		Perform assembly editing
34		Perform insert editing
35		Operate editing board
36		Wire editing board
37		Use console and ENG VCR (4800, 5800, and 2800 series)
38		Practice routine maintenance
39		Locate job openings
40		Create a resume
41		Complete job applications
42		Participate in job interview
43		Participate in VICA

7/83 K.L. Lamalie, STEC

Page 1 of 1

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CORE/ OPTION PLAN FOR: WELDING

TASK	HOURS	OPTIONS
C	270	COMPLETING CORE CURRICULUM
01		Complete orientation to CBI
02		Complete orientation to work habits and attitudes
03		Practice safety
04		Interpret detailed drawing
05		List materials for fabrication from blueprint
06		Develop shop drawings
07		Identify metals by appearance and weight
08		Identify metals by spark test
09		Classify metals by magnetic properties
10		Perform cutting operations manually
11		Perform bending operations manually
12		Perform finishing operations manually
13		Perform cutting operations with power equipment
14		Perform bending operations with power equipment
15		Perform drilling operations with power equipment
16		Perform punching operations with power equipment
17		Perform finishing operations with power equipment
18		Locate job openings
19		Create a resume
20		Complete job applications
21		Participate in job interview

TASK	HOURS	OPTIONS
22		Participate in VICA
		NOTE: THE CORE CURRICULUM IS A PREREQUISITE TO ALL OPTIONS.
1	120	OPTION 1 - OPERATING GAS WELDING EQUIPMENT
01		Setup oxy-fuel equipment
02		Cut carbon steel using oxy-fuel equipment
03		Gas weld carbon steel joints
04		Gas weld cast iron
05		Braze ferrous and nonferrous metals
06		Silver braze copper pipe joints
07		Lead-solder ferrous and nonferrous metals
08		Hand form metals with gas equipment
09		Remove distortion using gas equipment
2	810	OPTION 2 - OPERATING ARC WELDING EQUIPMENT
01		Run short beads
02		Perform surfacing operations: flat position
03		Weld single and multiple pass lap joints: horizontal position

TASK	HOURS	OPTIONS
04		Weld multiple pass "tee" joints: horizontal position
05		Weld outside corner joints: flat position
06		Weld butt joints: flat position
07		Weld single and multiple pass lap joints: true horizontal position
08		Weld multiple pass "tee" joints: true horizontal position
09		Weld outside corner joints: horizontal position
10		Weld butt joints: horizontal position
11		Weld single and multiple pass lap joints: vertical position
12		Weld multiple pass "tee" joints: vertical position
13		Weld outside corner joints: vertical position
14		Weld butt joints: vertical position
15		Weld single and multiple pass lap joints: overhead position
16		Weld multiple pass "tee" joints: overhead position
17		Weld outside corner joints: overhead position
18		Weld butt joints: overhead position
19		Weld with the low-hydrogen electrodes
20		Weld guided bend test plates: all positions
21		Perform cutting operations with SMAW equipment
3	270	OPTION 3 - OPERATING GAS SHIELDED ARC WELDING EQUIPMENT (OPTION 2 IS A PREREQUISITE)
01		Assemble GTAW equipment
02		Weld mild steel joints with GTAW equipment
03		Weld stainless steel joints with GTAW equipment
04		Weld aluminum joints with GTAW equipment
05		Deposit weld beads with GMAW equipment
06		Weld mild steel joints with GMAW equipment
07		Weld aluminum joints with GMAW equipment
08		Weld stainless steel joints with GMAW equipment
4	270	OPTION 4 - FABRICATING PIPE JOINTS (OPTION 2 IS A PREREQUISITE)
01		Prepare pipe joints for welding
02		Setup and weld pipe joints
5	150	OPTION 5 - PERFORMING COMBINATION WELDING SKILLS (OPTIONS 2 & 3 ARE PREREQUISITES)
01		Repair products from ferrous/nonferrous metals
02		Fabricate products from ferrous/nonferrous metals
		3/84 Vince Repper, NTEC Jim Schmidt, STEC Joe Smith, WTEC
		APPROXIMATE COURSE LENGTH = 1,890 HOURS

Appendix C

Memorandums Regarding Inservice

THE SCHOOL BOARD
OF PALM BEACH COUNTY, FLORIDA

3323 BELVEDERE ROAD
WEST PALM BEACH, FLORIDA 33402

TELEPHONE 684 5000

THOMAS J. MILLS
SUPERINTENDENT
OF SCHOOLS

PAULA F. NESSMITH
CHAIRMAN
LOUIS J. EASSA
VICE CHAIRMAN
GEORGE H. BAILEY
ROBERT [illegible] HOWELL
SAMUEL S. LOVELL
HUGH MacMILLAN, JR
SUSAN R. PELL

July 6, 1983

TO: Area Center Directors

FROM: E. Miles Bacon, Director EMB
Vocational-Technical Education

RE: August 19, Pre-school Workshop

In order to effectively accomplish our goals concerning CBI, it will be necessary to begin curriculum development in several program areas. A key factor to the completion of this project is the support and total commitment from the school center administration. I am requesting the tech center directors meet with designated instructors and reinforce your commitment. The meeting will take place on August 19 at 1:00 p.m. at Palm Beach Gardens High School.

The progress made by vocational instructors during the past year was commendable. Several instructors became very enthusiastic and have developed a number of student learning guides. Instructors have gained an insight into the mechanics of CBI and are now ready to move ahead.

Please contact me if you have any questions or concerns.

cc: Pat Nugent
Lee Perry
Joe Picklesimer
Wilma McCarty

THE SCHOOL BOARD
OF PALM BEACH COUNTY, FLORIDA

3323 BELVEDERE ROAD
WEST PALM BEACH, FLORIDA 33402

TELEPHONE [illegible]

[illegible]
[illegible]
GEORGE H. BAILEY
ROBERT S. HOWELL
[illegible]
HUGH McMILLAN JR.
SUSAN R. PELL

August 26, 1983

TO: Area Center Directors

FROM: E. Miles Bacon, Director MB
Vocational-Technical Education

Wilma McCarty, Specialist WM
Curriculum and Staff Development

RE: Curriculum Development Calendar

Attached you will find a schedule for the curriculum development activities proposed for 1983-84. These dates have been set aside for countywide meetings. This will be the only notice and, if approved, school center personnel should arrange for substitutes. The school center will be notified immediately of any change in location or date.

Your cooperation is appreciated.

cc: Patricia Nugent
Lee Perry
Joe Picklesimer

Curriculum Development Calendar

Diesel Engine Mechanics
Heavy Equipment and Operation
Heavy Equipment Mechanics

September 13, 1983	9:00 a.m til 2:30 p.m.	WTEC
September 20, 1983	9:00 a.m. til 2:30 p.m.	WTEC
September 27, 1983	9:00 a.m. til 2:30 p.m.	WTEC
October 4, 1983	9:00 a.m. til 2:30 p.m.	WTEC
October 11, 1983	9:00 a.m. til 2:30 p.m.	WTEC
October 18, 1983	9:00 a.m. til 2:30 p.m.	WTEC

Masonry

September 21, 1983	9:00 a.m. til 2:30 p.m.	STEC
November 16, 1983	9:00 a.m. til 2:30 p.m.	STEC
January 11, 1984	9:00 a.m. til 2:30 p.m.	STEC
March 14, 1984	9:00 a.m. til 2:30 p.m.	STEC

Commercial Foods and Culinary Arts

September 19, 1983	9:00 a.m. til 2:30 p.m.	NTEC
November 28, 1983	9:00 a.m. til 2:30 p.m.	WTEC
January 30, 1984	9:00 a.m. til 2:30 p.m.	STEC
March 19, 1984	9:00 a.m. til 2:30 p.m.	NTEC
April 23, 1984	9:00 a.m. til 2:30 p.m.	WTEC
May 21, 1984	9:00 a.m. til 2:30 p.m.	STEC

Automotive Body Repair and Refinishing

September 14, 1983	9:00 a.m. til 2:30 p.m.	WTEC
October 19, 1983	9:00 a.m. til 2:30 p.m.	NTEC
December 7, 1983	9:00 a.m. til 2:30 p.m.	STEC
February 22, 1984	9:00 a.m. til 2:30 p.m.	NTEC
April 11, 1984	9:00 a.m. til 2:30 p.m.	WTEC
May 2, 1984	9:00 a.m. til 2:30 p.m.	STEC

Welding

September 6, 1983	9:00 a.m. til 2:30 p.m.	NTEC
October 3, 1983	9:00 a.m. til 2:30 p.m.	STEC
November 10, 1983	9:00 a.m. til 2:30 p.m.	WTEC
December 2, 1983	9:00 a.m. til 2:30 p.m.	NTEC
February 3, 1984	9:00 a.m. til 2:30 p.m.	STEC
March 2, 1984	9:00 a.m. til 2:30 p.m.	WTEC

Carpentry

August 22, 1983	9:00 a.m. til 2:30 p.m.	NTEC
October 12, 1983	9:00 a.m. til 2:30 p.m.	WTEC
December 14, 1983	9:00 a.m. til 2:30 p.m.	STEC
February 15, 1984	9:00 a.m. til 2:30 p.m.	NTEC
April 18, 1984	9:00 a.m. til 2:30 p.m.	WTEC
June 7, 1984	9:00 a.m. til 2:30 p.m.	STEC

Appendix D

"Write Student Learning Guides"

STUDENT LEARNING GUIDE

THE SCHOOL BOARD
OF PALM BEACH COUNTY, FLORIDA

PROGRAM:

DUTY: ☐ COMPLETING ORIENTATION TO CBI

TASK: ☐ ☐ Write a Student Learning Guide

PURPOSE:

As vocational education in Florida moves to a competency-based approach, it must also move toward individualized instruction. Varying instruction to meet individual needs is the essence of individualized instruction. Because individualized instruction focuses attention on the needs of the individual learner, the role of the instructor is more important than ever before.

PLEASE DO NOT WRITE IN LEARNING GUIDE

DUTY
TASK
PREREQ.
DEPT.
PROG.
REVISED

1

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2625 State Road 715
Belle Glade, Florida 33430

E. Miles Bacon, Director of Vocational-Technical Education

Wilma McCarty, Curriculum and Staff Development Specialist

THIS STUDENT LEARNING GUIDE WAS DEVELOPED BY:

Wilma McCarty Roy
Curriculum and Staff Development Specialist

The format used in this student learning guide is one of the products developed through a grant from the Division of Vocational Education, Florida Department of Education which designated Ridge Vocational-Technical Center as a state demonstration site for competency-based vocational education.

OBJECTIVES

DUTY

TASK

DEPT.

PROG.

PERFORMANCE OBJECTIVE:
(Include condition, performance, and standard)

GIVEN: access to forms, resources, and materials,

YOU WILL: write a student learning guide.

HOW WELL: Your performance will be assessed by your instructor using the Performance Test.

NOTE: Spcific instructions on writing knowledge tests and performance tests will be covered in a separate learning guide.

ENABLING OBJECTIVES:

1. Write a cover page.
2. Write an objectives page.
3. Write a learning activities page.
4. Write instruction sheets.
5. Write self-checks.
6. Practice writing a student learning guide.

LEARNING ACTIVITIES FOR ENABLING OBJECTIVE 1

number

Enabling objective

Write a cover page.

PROCEDURE

LEARNING ACTIVITIES	RESOURCES
1. Read Resource No. 1 describing a cover page.	1. Instruction Sheet enclosed, What Is a Cover Page?
2. As a Self-Check, write a cover page. Have your instructor check your work.	2. Self-Check enclosed.
3. Go on to Enabling Objective No. 2.	

INSTRUCTION SHEET FOR ENABLING OBJECTIVE 1 number PAGE 5 OF 32

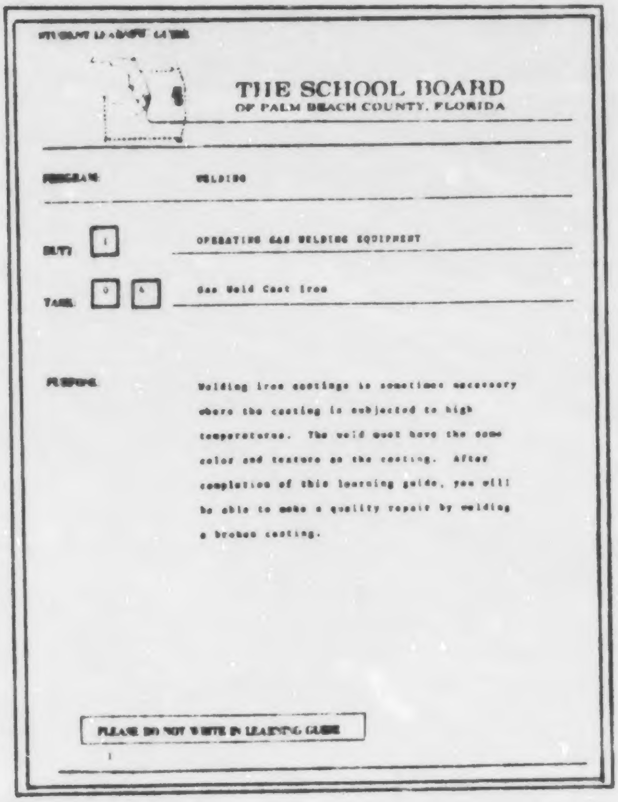
DUTY
TASK
EN. OBJ.
DEPT.
PROG.

What is a Cover Page?

The cover page should tell the student why the task is important to the occupation and motivate the student to learn the task. The following items are key points in developing the purpose:

- statements should speak directly to the student.
- statements should be short and concise.
- task and option statements should appear on the cover page.
- statements should motivate.

An example of a cover page appears below.



STUDENT LEARNING GUIDE

THE SCHOOL BOARD
OF PALM BEACH COUNTY, FLORIDA

PROGRAM: WELDING

DUTY: 1 OPERATING GAS WELDING EQUIPMENT

TASK: 0 4 Gas Weld Cast Iron

PURPOSE: Welding iron castings is sometimes necessary where the casting is subjected to high temperatures. The weld must have the same color and texture as the casting. After completion of this learning guide, you will be able to make a quality repair by welding a broken casting.

PLEASE DO NOT WRITE IN LEARNING GUIDE

1

SELF-CHECK FOR ENABLING OBJECTIVE 1 number PAGE 6 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

DIRECTIONS:

Evaluate your work by answering the items below. All items should receive a "YES" response.

	YES	NO
1. Were option and task statements listed on the cover page?................................	____	____
2. Was purpose short and concise?...............	____	____
3. Was purpose motivating to the student?.......	____	____
4. Was purpose written to speak directly to the student?..................................	____	____

If you received a "NO" response for any item, go back and repeat one or more of the Learning Activities for this Enabling Objective.

LEARNING ACTIVITIES FOR ENABLING OBJECTIVE 2
number

PAGE 7 OF 32

DUTY
TASK
EN. OBJ.
DEPT.
PROG.

Enabling objective

Write an objectives page.

PROCEDURE

LEARNING ACTIVITIES	RESOURCES
1. Read Resource No. 1 identifying the components of an objectives page.	1. Instruction Sheet enclosed, Writing a Performance Objective
2. As a Self-Check, write a performance objective. Have your instructor check your work.	2. Self-Check enclosed.
3. Read Resource No. 3 identifying the steps in writing an enabling objective.	3. Instruction Sheet enclosed, Writing Enabling Objectives
4. As a Self-Check, write enabling objectives for three selected tasks. Have your instructor check your work.	4. Self-Check enclosed.
5. Go on to Enabling Objective No. 3.	

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Writing a Performance Objective

The performance part, or verb, is the most important part of the objective. This verb identifies the actual learner outcome. It tells exactly what the learner will be able to do. Learner outcomes usually fall into two categories: must know (information) and must do (performance).

Must know learner outcomes are generally expressed using verbs such as define, list, state, identify, name and describe. In the performance part of a must know objective, you are identifying the method by which the student will demonstrate mastery over some specified information.

Must do learner outcomes are often stated using verbs such as repair, demonstrate, drive, operate, type, and sew. In the performance part of a must do objective, you should specify the action the learner must perform. The emphasis is on performance of the task.

Vague verbs such as understand, learn, evaluate, and know should be avoided in performance objectives. These verbs cannot be measured and may mean different things to different people.

Two examples of performance objectives are shown below. Notice that the verbs are explicit.

GIVEN: access to a 12 in ruler,

YOU WILL: measure wood.

HOW WELL: Your performance will be assessed by your instructor using the Performance Test.

GIVEN: access to ten written measurements expressed in feet and inches,

YOU WILL: identify metric measurements.

HOW WELL: You must successfully complete the Knowledge Test.

SELF-CHECK FOR ENABLING OBJECTIVE 2 number

PAGE 9 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

DIRECTIONS:

Evaluate your work by completing the items below. All items should receive a "YES" response.

	YES	NO
1. Was an action verb selected to begin the performance objective?....................................		
2. Was "Given" completed to indicate what the student would need to complete the task?...............		
3. Was the task restated in "You Will"?............		
4. Was the acceptable level of performance stated in "How Well"?..................................		

If you received a "NO" response for any item, go back and repeat one or more of the Learning Activities for this Enabling Objective.

Writing Enabling Objectives

The Enabling Objectives (E.O's) simply break the student learning guide up into two or three major sections. Do not confuse E.O.'s with the specific steps required to perform a task on the job. An enabling objective describes a segment of learning that is large enough for the student to learn it, to stop to practice it or apply that learning, receive feedback and then go on to the next E.O. Each E.O. should stand alone as a meaningful aspect of learning. The following are examples of Enabling Objectives used in student learning guides.

TASK	ENABLING OBJECTIVES
• Take temperature orally	1. Describe causes and results of abnormal body temperature. 2. Read oral thermometer. 3. Practice taking temperature orally.
• Service fuel pump	1. Identify the steps in servicing a fuel pump. 2. Practice servicing a fuel pump.
• Type and run spirit masters	1. Type and correct spirit masters. 2. Practice running spirit masters.

Tips on Writing Enabling Objectives:

- Skill tasks often have knowledge enabling objectives. The knowledge is presented first with ample opportunity to practice the task.
- Each Enabling Objective begins with an action verb.
- The last Enabling Objective is a restatement of the task itself.
- Each Enabling Objective presents a major segment of knowledge that can be presented and practiced with immediate feedback given to the student.

SELF-CHECK FOR ENABLING OBJECTIVE 2 number PAGE 11 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

DIRECTIONS:

Evaluate your knowledge by answering the items below on a separate sheet of paper.

All items should receive a "YES" response.

	YES	NO
1. Was each Enabling Objective begun with an action verb?................		
2. Was a major segment of knowledge presented in each Enabling Objective?..		
3. Was the knowledge Enabling Objective presented first?.................		
4. Was the last Enabling OBjective a restatement of the task?...........		

If you received a "NO" response for any item, go back and repeat one or more of the Learning Activities for this Enabling Objective.

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LEARNING ACTIVITIES FOR ENABLING OBJECTIVE 3 number PAGE 12 OF 32

DUTY
TASK
EN. OBJ.
DEPT.
PROG.

Enabling objective:

Write a learning activities page.

PROCEDURE

LEARNING ACTIVITIES	RESOURCES
1. Read Resource No. 1 identifying the purpose of a learning activity.	1. Instruction Sheet enclosed, What Is a Learning Activity?
2. Read Resource No. 2 to determine how to write a learning activities page.	2. Instruction Sheet enclosed, Writing Learning Activities
3. As a Self-Check, write two Learning Activities. Have your instructor check your work.	3. Self-Check enclosed.
4. Go on to Enabling Objective No. 4.	

What is a Learning Activity?

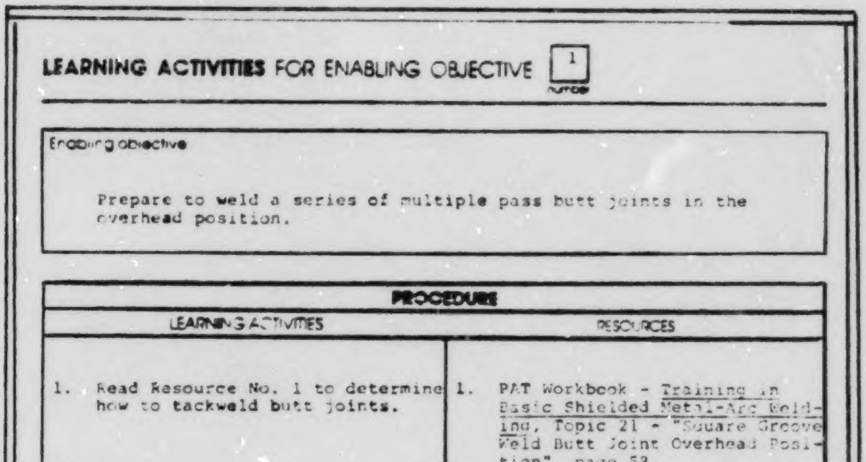
The learning activities are designed to guide the student to achieve a stated enabling objective, and include important steps of the learning process; first the student is presented with new knowledge, awareness or skill needed to attain the enabling objective; the student then applies this learning by a specific assignment; then the student's application is tested by completing a self-check, oral questions, or other feedback methods.

The Learning Steps should include three steps: Presentation, Practice, and Feedback. Examples are shown below:

Presentation	1.	Read Resource No. 1	2.	View Resource No. 2
Practice	1.	Practice removing a fuel pump.	2.	Evaluate your work...
Feedback	1.	Have your instructor check your work.	2.	Check your answers with the Answer Key.

Writing Learning Activities

The learning steps shown in the left hand column direct the student to perform certain activities to attain the task. The resource column lists the reference material (texts, manuals, audiovisuals, etc.) needed by the student. Alternate resources are used whenever possible to meet the individual needs of the student. As resources are updated, the right hand column may be revised.



LEARNING ACTIVITIES FOR ENABLING OBJECTIVE 1 number

Enabling objective

Prepare to weld a series of multiple pass butt joints in the overhead position.

PROCEDURE	
LEARNING ACTIVITIES	RESOURCES
1. Read Resource No. 1 to determine how to tackweld butt joints.	1. PAT Workbook - Training in Basic Shielded Metal-Arc Welding, Topic 21 - "Square Groove Weld Butt Joint Overhead Position", page 58 or Module: "Vocational Trade and Industrial Education - Welding", Section E, Unit 2, pages 73E-75E.
2. Use Resource No. 2 to determine how to position and weld butt joints in the overhead position.	2. a. PAT Workbook - Training in Basic Shielded Metal-Arc Welding, Topic 21 - "Square Groove Weld Butt Joint Overhead Position", pages 59-61. b. Hobart 8 mm film loop and cassette: Topic 21 - "Square Groove Weld Butt Joint Overhead Position" c. Beseler Cue/See machine
3. See instructor for oral questioning.	3. Instructor
4. Go on to Enabling Objective No. 2.	

SELF-CHECK FOR ENABLING OBJECTIVE 3 number PAGE 15 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

DIRECTIONS:

Evaluate your knowledge by answering the following questions in a separate sheet of paper.
All items should receive a "YES" response.

	YES	NO
1. Were learning steps in sequential order?....		
2. Was opportunity for practice provided?......		
3. Were alternate resources used if possible?..		
4. Was identifying information provided for each resource (page numbers, title of audiovisual, etc.)?........................		
5. Was student directed to go on to the next Enabling Objective?........................		

If you received a "NO" response for any item, go back and repeat one or more of the Learning Activities for this Enabling Objective.

LEARNING ACTIVITIES FOR ENABLING OBJECTIVE 4 number

PAGE 16 OF 32

DUTY | TASK | EN. OBJ. | DEPT. | PROG.

Enabling objective

Write instruction sheets.

PROCEDURE

LEARNING ACTIVITIES	RESOURCES
1. Use Resource No. 1 to identify the types of instruction sheets.	1. Instruction Sheet enclosed, Types of Instruction Sheets
2. Read Resource No. 2 to identify the copyright considerations to be aware of when developing instruction sheets.	2. Instruction Sheet enclosed, Copyright Considerations
3. Using Resource No. 3 as a guide, write an instruction sheet. Have your instructor check your work.	3. a. Self-Check enclosed. b. Instructor
4. Go on to Enabling Objective No. 5.	

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Types of Instruction Sheets

The Instruction Sheet provides information to the student. The information may occur in several forms: instruction sheet, information sheet, procedures sheet, job plan sheet, etc. In order to cover information many vocational instructors develop instruction sheets from personal knowledge and experience of the trade. This type of instruction sheet may be an activity, sequential listing of steps needed to complete a task, or knowledge needed to perform hands-on activities. A credit line, as shown below, is used to give the instructor credit for developing the Instruction Sheet.

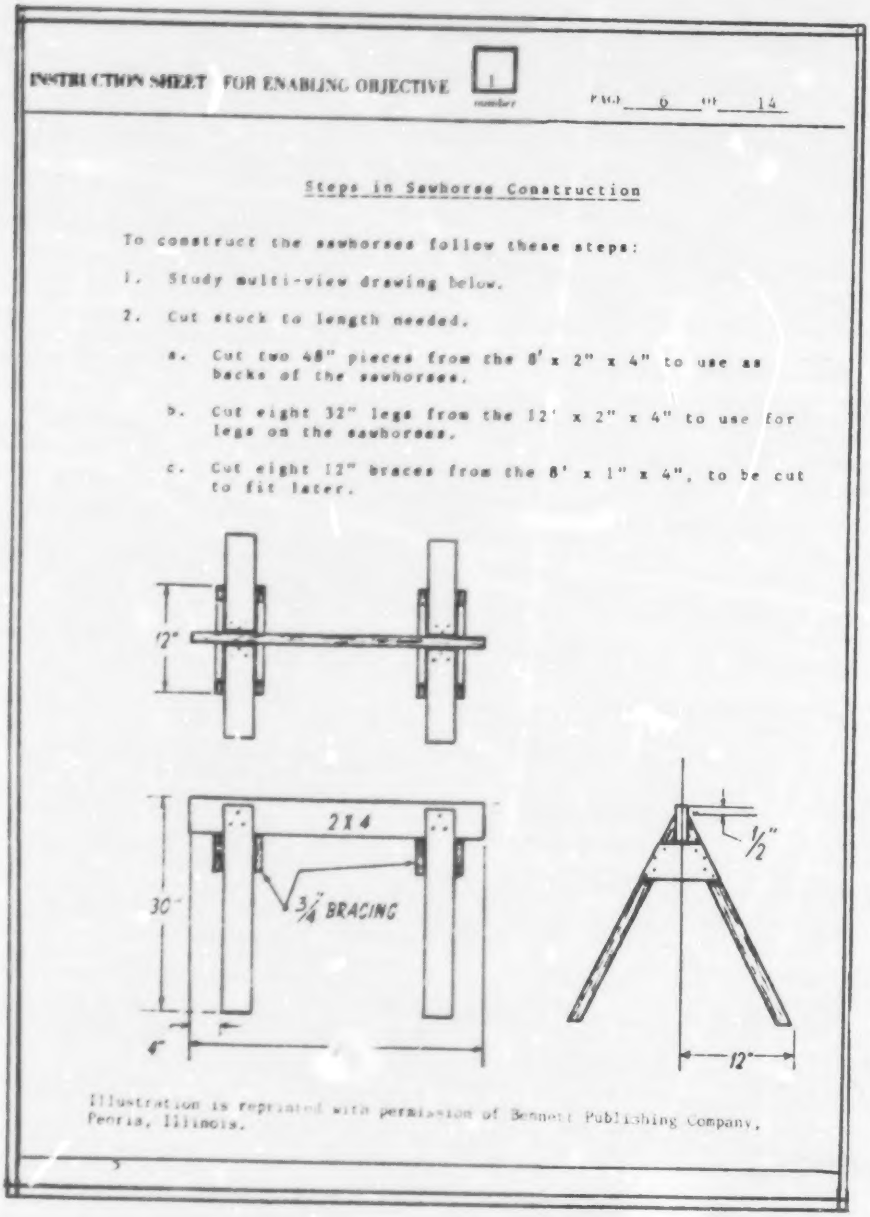
Instruction Sheet Prepared by Art Dingee

In the event that material is used from a copyrighted source then a credit line must appear at the bottom of the page. A credit line must appear following an illustration or chart with information taken from a trade journal, or article. An example is shown on the following page.

The following are key points in developing Instruction Sheets:

- o Keep sentences short.
- o Define technical terms.
- o Clearly label all illustrations.
- o Be sure steps are listed in the correct order.
- o Obtain copyright permission for all materials.
- o Credit any trade journals or articles.

A sample Instruction Sheet appears on the following page.



INSTRUCTION SHEET FOR ENABLING OBJECTIVE 1 number PAGE 6 OF 14

Steps in Sawhorse Construction

To construct the sawhorses follow these steps:

1. Study multi-view drawing below.
2. Cut stock to length needed.
   a. Cut two 48" pieces from the 8' x 2" x 4" to use as backs of the sawhorses.
   b. Cut eight 32" legs from the 12' x 2" x 4" to use for legs on the sawhorses.
   c. Cut eight 12" braces from the 8' x 1" x 4", to be cut to fit later.

Illustration is reprinted with permission of Bennett Publishing Company, Peoria, Illinois.

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Copyright Considerations

Vocational instructors must be aware of the laws concerning copy right when developing materials. Credit must be given to any developer whose material appears in a student learning guide. In many instances the material, if it is developed with federal monies, is in the public domain. Public domain means that the material is not copyrighted; it may be used without permission from the original developer. Materials in the public domain do not usually contain a copyright statement. They may include a statement such as "This material may be reproduced without prior consent of the developer."

Most materials, however, are protected by copyright and bear the copyright statement. There are three basic elements of the notice that must appear on all publicly distributed copies of each edition of a copyrighted work, including field-test or draft versions. The first element is the symbol © (or the word copyright, or the abbreviation copr.). The second, immediately after this, is the name (or clearly recognizable abbreviation of the name) of the copyright owner. The final element is the year of the first publication of the work. This notice should be placed on all copies in a manner and location that provide for reasonable notice of the claim of copyright. Generally, this is in the front matter (the preliminary pages before the body of the text), on the reverse side of the title page.

You can't always tell the status of a work just by physically examining the material, however. The notice may have been left off by mistake, or you may be looking at a copy of a draft version that was not intended for circulation. Do not assume that the lack of a copyright symbol or statement means that the material is not copyrighted: you must verify the copyright status by calling and writing to the producer.

You will need to negotiate for permission to use copyrighted materials. There are three types of clearance that you may receive.

1. Specific use: This is a request for permission to use a limited amount of material from a particular product. The material appears in the original product, or it may be adapted. An example of a specific use would be requesting permission to use a chart.

2. General Use: This is a request for permission to use any materials published by a company or any materials within a certain series of products. An example of general use would be requesting permission to use any materials produced by the General Motors Corporation.

Because of the very nature of general use requests, companies may be more reluctant to authorize them. The company must be convinced that your product will not compete with theirs and that the use will be good advertising for the company. If general authorization is denied, it will be necessary to request permission for each separate item on a specific-use basis.

3. Reproduction Use: This is a request for permission to reproduce an entire document. This request is made when you locate a product that suits your project's needs and it would be a duplication of effort for you to, in essence, re-create the same product. Your request may range from using the material exactly as it was originally developed through adapting it slightly to adapting it extensively.

Until you have received written, signed permission, you do not have authorization to use the material. Do not use materials for which you have no written permission.

Make sure that the correct credit line for each usage is incorporated into your materials. The following general formats have been developed by the Division of Vocational Education, Tallahassee, Florida.

1. For general use:

FORMAT for material used exactly as it appeared in the original product: From (title or work) by (author). © (date) by (name of owner). Used with permission of (name of organization).

EXAMPLE: From Heating and Air Conditioning Service Unit 3: Heating System Service - Student Guide. © 1980 by State of Florida, Department of State. Used with permission of State of Florida, Department of State.

FORMAT for material that has been adapted:

Adapted from (title of work) by (author). © (date) by (name of owner). Used with permission of (name of organization).

EXAMPLE: Adapted from Dairy Cattle Judging Techniques by George W. Trimberger. © 1977 by Prentice-Hall, Inc. Used with permission of Prentice-Hall, Inc.

2. For public-domain material:

FORMAT: From (name of product), year, organization).

EXAMPLE: From Clothing Management, Production and Service: A Resource Guide. 1976, State of Florida, Department of Education, Home Economics Section.

3. For reproduced material:

If you are reproducing an entire document, you must obtain permission not only to reproduce the work but also to make any changes in the product. If the revisions are major, the product may be considered a Florida adaptation and will need to be copyrighted by the State of Florida. For a major adaptation of a reproduction, contact the Florida Educator's Information Service (FEIS), Tallahassee, Florida.

A reproduction requires both a copyright statement and a permission for reproduction statement.

For reproduction with the copyright ownership remaining with the original owner, use the following format for the copyright statement:

FORMAT: Copyright symbol, name of owner, date.

EXAMPLE: © Oregon State Department of Education, 1976.

In all situations, you will need a statement that indicates that you have obtained permission from the original owner to reproduce the material. If you have retitled the material, you will need to indicate the original title. This statement must be cleared with the original owner, and it must be placed in the front matter, immediately after the copyright statement.

EXAMPLE: This material was adapted from a series of modules originally entitled: " Individualized Learning Systems: Electronics". These modules were developed by and are reproduced by permission of the Oregon State Department of Education.

You are responsible for the placement of credit lines.

1. For specific use, general use, or public domain material: Illustrations are credited directly underneath the illustration.

The credit line for text material generally appears at the bottom of the page and must clearly indicate the appropriate section(s) taken from another source. If the copyrighted material runs longer than one page in your product and it is obvious that the material is from the same source, the credit line may be placed at the end of the usage. An example of this would be a two-page chart.

2. For reproduced material:

If an entire document is being reproduced, the copyright statement and the authorization for reproduction statement are placed in the front matter, generally on the reverse of the title page.

MAINTAINING DOCUMENTATION

All written documentation concerning copyright should be filed under the name of the organization or program title of the occupation.

SELF-CHECK FOR ENABLING OBJECTIVE 4

number

PAGE 23 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

DIRECTIONS:

Evaluate your knowledge by answering the items below on a separate sheet of paper.
All items should receive a YES response.

	YES	NO
1. Was title of Instruction Sheet same as that which appeared on the Learning Activities page?....................................	____	____
2. Was copyright permission obtained for all sources?..................................	____	____
3. Was information presented in a logical order (not omitting any steps)?...............	____	____
4. Were technical terms defined, when necessary?................................	____	____

If you received a "NO" response for any item, go back and repeat one or more of the Learning Activities for this Enabling Objective.

LEARNING ACTIVITIES FOR ENABLING OBJECTIVE 5

number

PAGE 24 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

Enabling objective

Write self-checks.

PROCEDURE

LEARNING ACTIVITIES	RESOURCES
1. Read Resource No. 1 to identify the different types of Self-Checks.	1. Instruction Sheet enclosed, Types of Self-Checks
2. Using Resource No. 2 as a guide write a Self-Check. Have your instructor check your work.	2. Self-Check enclosed.
3. Go on to Enabling Objective No. 6.	

Types of Self-Check

Self-Checks are used by students to evaluate their progress as they proceed through a student learning guide. Each Self-Check should only evaluate that particular enabling objective.

A self-check provides immediate feedback to the student. There are two types of Self-Checks, knowledge and performance (skill).

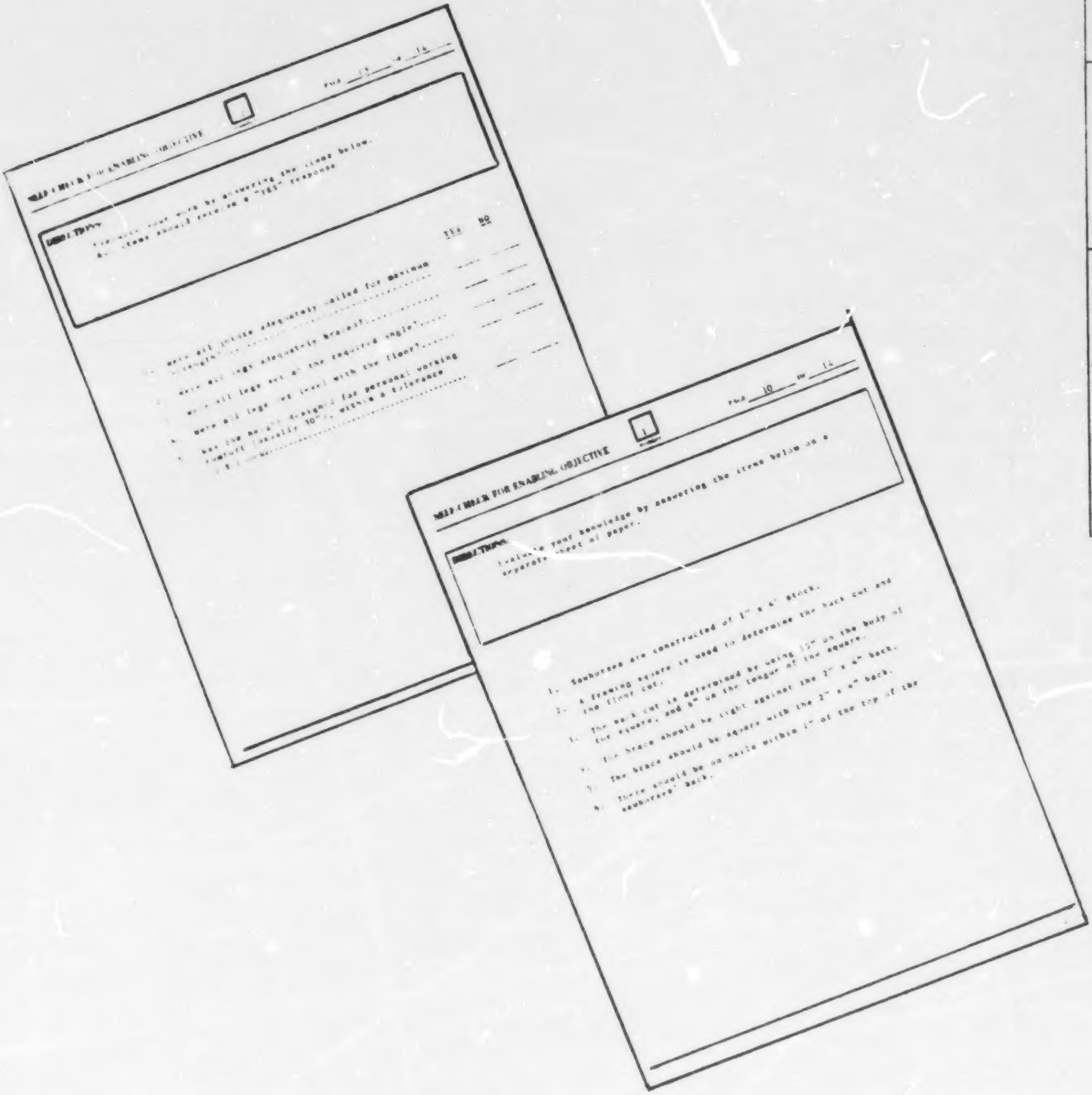
Knowledge Self-Check may contain true-false, fill-in-the blank, multiple choice, matching, short answer and essay questions.

Performance Self-Check evaluate "hands-on" activities. Students are able to practice tasks and evaluate their work using the criteria on the Self-Check as a check list. This allows for practice opportunity prior to performance. A student may practice a task as many times as necessary to achieve competency. No grade is given on a Self-Check. When the student feels he or she is ready to perform the task, the instructor evaluates his or her skill using the Performance Test.

An answer key follows the knowledge Self-Check. However, there are exceptions, in some cases the instructor may feel that student-teacher contact is important at this point. At this time the instructor may require the student to answer questions orally.

A self-check is not always included in the student learning guide. The student may be referred to a textbook to answer questions. Examples of various Self-Checks appear on the following pages.

Performance Self-Checks. Performance Self-Checks are used to allow students to evaluate their work prior to performance. Questions listed on the Self-Check are crucial to the performance of the task. "Nice-to-Know" items are eliminated. Any items which are critical to safety must be listed on the Self-Check.



SELF CHECK FOR ENABLING OBJECTIVE [illegible] number PAGE [illegible] OF 14

DIRECTIONS: Evaluate your work by answering the items below. All items should receive a "YES" response.

	YES	NO
1. Were all joints adequately nailed for maximum strength?	___	___
2. Were all legs adequately braced?	___	___
3. Were all legs set at the required angle?	___	___
4. Were all legs set level with the floor?	___	___
5. Was the height designed for personal working comfort (usually 30"), within a tolerance [illegible]	___	___

SELF CHECK FOR ENABLING OBJECTIVE 1 number PAGE 10 OF 14

DIRECTIONS: Evaluate your knowledge by answering the items below on a separate sheet of paper.

1. Sawhorses are constructed of 1" x 6" stock.
2. A framing square is used to determine the back cut and the floor cut.
3. The back cut is determined by using 15" on the body of the square, and 6" on the tongue of the square.
4. The brace should be tight against the 2" x 6" back.
5. The brace should be square with the 2" x 6" back.
6. There should be no nails within 1" of the top of the sawhorses' back.

ELF-CHECK FOR ENABLING OBJECTIVE 5

number

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

DIRECTIONS:

Evaluate your knowledge by answering the following items in a separate sheet of paper. All items should receive a "YES" response.

	YES	NO
1. Was each question begun with a past tense verb?................................	____	____
2. Were questions listed in a logical order to allow the students to evaluate their work?.	____	____
3. Were items critical to safety listed?.....	____	____

If you received a "NO" response for any item, go back and repeat one or more of the Learning Activities for this Enabling Objective.

LEARNING ACTIVITIES FOR ENABLING OBJECTIVE 6 number PAGE 28 OF 32

Enabling objective

Practice writing a student learning guide.

PROCEDURE

LEARNING ACTIVITIES	RESOURCES
1. Using the parts of a learning guide developed to this point, select a task and write a learning guide. Have your instructor check your work.	1. Instructor
2. Complete the Self-Check.	2. Self-Check enclosed.
3. When you think you can perform this task, take the Performance Test.	3. Performance Test.

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

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SELF-CHECK FOR ENABLING OBJECTIVE

6
number

PAGE 29 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

DIRECTIONS:

Evaluate your work by answering the items below using a separate sheet of paper.

All items shoud receive a "YES" response.

	YES	NO
1. Were option and task statements listed on the cover page?..........	___	___
2. Was purpose short and concise?....................................	___	___
3. Was purpose motivating to the student?............................	___	___
4. Was purpose written to speak directly to the student?.............	___	___
5. Was an action verb selected to begin the performance objective?.....	___	___
6. Was "Given" completed to indicate what the student would need to complete the task?..	___	___
7. Was the task restated in "You Will"?...............................	___	___
8. Was the acceptable level of performance stated in "How Well"?.......	___	___
9. Was each Enabling Objective begun with an action verb?.............	___	___
10. Was a major segment of knowledge presented in each Enabling Objective?..	___	___
11. Was the knowledge Enabling Objective presented first?..............		
12. Was the last Enabling Objective a restatement of the task?..........	___	___
13. Were learning steps in sequential order?...........................	___	___
14. Was opportunity for practice provided?.............................	___	___
15. Were alternate resources used if possible?.........................	___	___
16. Was identifying information provided for each resource (page numbers, title of audiovisual, etc.)?..............................	___	___
17. Was student directed to go on to the next Enabling Objective?.......	___	___
18. Was title of Instruction Sheet the same as that which appeared on the Learning Activities Page?....................................	___	___
19. Was copyright permission obtained for all sources?.................	___	___
20. Was information presented in a logical order ?.....................	___	___
21. Were technical terms defined, when necessary?......................	___	___
22. Was each question begun with a past tense verb?....................	___	___
23. Were questions listed in logical order to allow the students to evaluate their work?...	___	___

SELF-CHECK FOR ENABLING OBJECTIVE 6 number
NTINUED

PAGE 30 OF 32

DUTY

TASK

EN. OBJ.

DEPT.

PROG.

24. Were items critical to safety listed?............................ ___ ___.

If you received a "NO" response for any item go back and repeat one or more of the Learning Activities for this Enabling Objective.

RFORMANCE TEST FOR ☐ ☐☐

duty task number

PAGE 31 OF 32

IRECTIONS:

Given access to resources, you will write a student learning guide. You will be evaluated for attainment of this task based upon the items listed below.

ERFORMANCE STANDARDS ALL ITEMS MUST BE MARKED YES FOR ATTAINMENT	YES	NO
1. Were option and task statements listed on the cover page?..		
2. Was purpose short and concise?..............................		
3. Was purpose motivating to the student?....................		
4. Was purpose written to speak directly to the student?..		
5. Was an action verb selected to begin the performance objective?..		
6. Was "Given" completed to indicate what the student would need to complete the task?..........................		
7. Was the task restated in "You Will"?........................		
8. Was the acceptable level of performance stated in "How Well"?..		
9. Was each Enabling Objective begun with an action verb..		
10. Was a major segment of knowledge presented in each Enabling Objective..		
11. Was the knowledge Enabling Objective presented first?..		
12. Was the last Enabling Objective a restatement of the task?..		
13. Were learning steps in sequential order?..................		

DUTY

TASK

ATTEMPT

STUDENT

DATE

☐ Attained
☐ Not attained

EVALUATOR

DEPT.

PROG.

ERFORMANCE TEST FOR ☐ ☐☐
ONTINUED duty task number PAGE 32 OF 32

ERFORMANCE STANDARDS

LL ITEMS MUST BE MARKED YES FOR ATTAINMENT	YES	NO
14. Was opportunity for practice provided?		
15. Were alternate resources used if possible?		
16. Was identifying information provided for each resource (page numbers, title of audiovisual etc.)?		
17. Was student directed to go on to the next Enabling Objective?		
18. Was title of Instruction Sheet same as that which appeared on the Learning Activities page?		
19. Was copyright permission obtained for all sources?		
20. Was information presented in a logical order (not omitting any steps)?		
21. Were technical terms defined, when necessary?		
22. Was each question begun with a past tense verb?		
23. Were questions listed in a logical order to allow the students to evaluate their work?		
24. Were items critical to safety listed?		

DUTY
TASK
ATTEMPT
STUDENT
DATE
☐ Attained
☐ Not attained
EVALUATOR
DEPT.
PROG.

Appendix E

Learning Guides Completed

Building Maintenance

7 03	Apply Paint, Varnish, Shellac

Carpentry

C-03	Identify Employment Opportunitites
C-04	Use Safety Practices
C-07	Use Drilling and Boring Tools
C-11	Use Fasteners
C-13	Use Portable Saws
C-14	Use Portable Electric Drills
C-16	Use Portable Electric Routers
C-17	Use Portable Elecatric Power Planes
C-18	Use Table Saws
C-19	Use Radial Arm Saws
C-32	Follow-up Application and Interview
C-33	Build Sawhorses
C-34	Erect Scaffolding
C-	Measure and Square Lumber
2-12	Layout and Cut a Common Rafter
2-13	Layout and Cut Hip and Valley Rafters

Commercial Foods and Culinary Arts

C-32	Arrange Buffet/Catering Service

Diesel Equipment Department

C-04	Describe Principles of 2 and 4 Cycle Diesel and Gasoline Engines
C-05	Identify Vises and Clamps
C-06	Identify Power Tools
C-07	Identify Fasteners
C-08	Select Hammers, Chisels, and Punches
C-09	Identify Screwdrivers, and Hand Tools
C-10	Identify Saws and Files
C-11	Select Taps and Dies
A-03	Practice Shop Safety
C-12	Select Wire Wheels and Brushes
C-13	Use Twist Drills

Machine Shop

C-13	Practice Filing
C-20	Use Vertical Band Saw
C-28	Operate Bridgeport J-Head
2-09	Perform Hand Grinding
2-04	Perform Counterboring, Countersinking and Spotfacing
3-05	Use Three Jaw Chuck
3-14	Use Knurling
3-20	Perform Taper Turning-Offset

Masonry

A-03	Practice Safety
A-05	Mix Practice Mortar
A-12	Cut Masonry Materials with Hand Tools and Cutoff Saws
2-01	Manipulate Mortar for Blocks
2-02	Lay Blocks to a Line
2-03	Construct a Block Wall Between Existing Leads
2-04	Lay an 8" Block Lead
2-05	Lay an 8" Block Corner
2-06	Construct an 8" Block Wall

Welding

C-01	Identify Metals by Appearance and Weight
1-01	Set-up Portable Oxy-fuel Equipment
1-03	Gas Weld Carbon Steel Joints
1-04	Gas Weld Cast Iron
1-05	Braze Ferrous and Nonferrous Metals
1-06	Silver Braze Copper Pipe Joints
1-07	Lead Solder Ferrous and Nonferrous Metal
1-09	Cut Carbon Steel Using Oxy-fuel Equipment
2-01	Run Short Beads
2-04	Weld Multiple Pass Tee Joints: Horizontal Position
2-05	Weld Outside Corner Joints: Flat Position
2-06	Weld Butt Joints: Flat Position
2-07	Weld Single and Multiple Pass Lap Joints: True Horizontal Position
2-08	Weld Multiple Pass Tee Joints: True Horizontal Position
2-09	Weld Outside Corner Joints: Horizontal Position
2-10	Weld Butt Joints: Horizontal Position
2-11	Weld Single and Multiple Pass Lap Joints: Vertical Position
2-12	Weld Multiple Pass Tee Joints: Vertical Position
2-13	Weld Outside Corner Joints: Vertical Position
2-14	Weld But Joints: Vertical Position
2-16	Weld Multiple Pass "Tee Joints: Overhead Position
4-01	Prepare Pipe Joints for Welding
4-02	Set-up and Weld Pipe Joints
5-01	Repair Products from Ferrous/Nonferrous Metals
5-02	Fabricate Products from Ferrous/Nonferrous Metals
A-11	Perform Bending Operations Manually
A-13	Perform Cutting Operations with Power Equipment
A-16	Perform Punching Operations with Power
A-18	Locate Job Openings
A-21	Participate in Job Interview

Appendix F

Learning Guide Checklist

Learning Guide Checklist

	YES	NO
Cover Page		
1. Was task stated exactly as found on the task listing?........	____	____
2. Was duty stated exactly as found on the task listing?........	____	____
3. Was motivation provided to the student through the purpose?..	____	____
Objective Page		
1. Were only those resources to be used while taking the Performance Test included in the "Given"?....................	____	____
2. Was the task statement restated in the "You Will"?..........	____	____
3. Was the competency level required on the Knowledge Test and/or the Performance Test stated in the "How Well'?........	____	____
4. Was each Enabling Objective begun with an action verb?.......	____	____
5. Was the student guided to attainment of the task through the Enabling Objective?...	____	____
6. Were knowledge, practice, and performance contained in the Enabling Objectives?..	____	____
7. Was each Enabling Objective able to "stand alone" as a meaningful unit of instruction?............................	____	____
Learning Activities		
1. Was some knowledge or related technology presented to the student in the first Learning Activity?....................	____	____
2. Was there an Enabling Objective page for each Enabling Objective listed on the Objective Page?....................	____	____
3. Was student feedback activity provided, such as Self-Check?..	____	____
4. Was the student directed to the next Enabling Objective?....	____	____
Instruction Sheets		
1. Was Instruction Sheet immediately following the Enabling Objective page on which it was referred to?.................	____	____
2. Were copyright violations omitted?..........................	____	____
Self-Check		
1. Was specific criteria listed to allow student feedback?.....	____	____
2. Was an answer key available for (knowledge) Self-Checks in each learning guide for student feedback?..................	____	____
Knowledge Test		
1. Was the Knowledge Test called for before the student engaged in practice?......................................	____	____
2. Were only true-false, multiple-choice, and matching items included?..	____	____
3. Were specific instructions included for each type of test item?..	____	____
Performance Test		
1. Were the following items included on the Performance Test		
a. any safety precautions?..................................	____	____
b. any time restrictions?....................................	____	____
2. Were job-entry requirements evaluated by the performance standards?..	____	____
3. Were subjective verbs such as correctly, properly, clearly, and approximately avoided in performance standard questions?..	____	____